

SEQUENCE LISTING

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<120> PHOSPHOLIPASES, NUCLEIC ACIDS ENCODING THEM AND METHODS FOR MAKING AND
USING THEM

<130> 09010-094001

<140>

<150> 2003-04-21

<160> 106

<170> FastSEO for Windows Version 4.0

<210> 1
<211> 849
<212> DNA
<213> Unkno

<220>
<223> Obtained from an environmental sample.

<400> 1								60
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gaggataagc	ataatgaggg	gattaactct	catttgtgga	ttgttaaatcg	tgcaattgac			240
atcatgtctc	gtaatacacaac	gattgtgaat	ccgaatgaaa	ctgcattatt	aatatgagtgg			300
cgtgctgatt	tagaaaaatgg	tatttattct	gctgattacg	agaatccta	ttatgataat			360
agtacatatg	cttctcaact	ttatgatccg	gatactgaa	caacatatat	tcctttgcg			420
aaacatgcaa	aagaacacagg	cgcaaaatat	tttaaccttgc	ctggtaaggc	atacaaaaat			480
caagatatgc	agcaaggcatt	cttctactta	ggattatcg	ttcatttattt	aggagatgtg			540
aatcagccaa	tgcattgcagc	aaactttacg	aatctttctt	atccaatggg	tttccattct			600
aaatacgaaa	attttgttga	tacaataaaa	aataactata	ttgtttcaga	tagcaatgg			660
tattggaatt	ggaaaggagc	aaaccaggaa	gattggatttgc	aaggagcagc	ggtagcagct			720
aaacaagatt	atcctggcgt	tgtgaacgat	acgacaaaag	attgggtttgt	aaaaggcagcc			780
gtatctcaag	aatatgcaga	taaatggcgt	gcggaaagtaa	caccggtgac	agggaaacgct			840
ttaatggaag	cgcagcgcgt	tacagctggt	tatattcatt	tgtggtttga	tacgtatgt			849
aatcgctaa								

<210> 2
<211> 282
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<221> SIGNAL
<222> (1)...(24)

<400> 2
 Met Lys Lys Lys Val Leu Ala Leu Ala Ala Met Val Ala Leu Ala Ala
 1 5 10 15
 Pro Val Gln Ser Val Val Phe Ala Gln Thr Asn Asn Ser Glu Ser Pro
 20 25 30
 Ala Pro Ile Leu-Arg Trp Ser Ala Glu Asp Lys His Asn Glu Gly Ile
 35 40 45
 Asn Ser His Leu Trp Ile Val Asn Arg Ala Ile Asp Ile Met Ser Arg
 50 55 60
 Asn Thr Thr Ile Val Asn Pro Asn Glu Thr Ala Leu Leu Asn Glu Trp
 65 70 75 80
 Arg Ala Asp Leu Glu Asn Gly Ile Tyr Ser Ala Asp Tyr Glu Asn Pro
 85 90 95
 Tyr Tyr Asp Asn Ser Thr Tyr Ala Ser His Phe Tyr Asp Pro Asp Thr
 100 105 110
 Gly Thr Thr Tyr Ile Pro Phe Ala Lys His Ala Lys Glu Thr Gly Ala
 115 120 125
 Lys Tyr Phe Asn Leu Ala Gly Gln Ala Tyr Gln Asn Gln Asp Met Gln
 130 135 140
 Gln Ala Phe Phe Tyr Leu Gly Leu Ser Leu His Tyr Leu Gly Asp Val
 145 150 155 160
 Asn Gln Pro Met His Ala Ala Asn Phe Thr Asn Leu Ser Tyr Pro Met
 165 170 175
 Gly Phe His Ser Lys Tyr Glu Asn Phe Val Asp Thr Ile Lys Asn Asn
 180 185 190
 Tyr Ile Val Ser Asp Ser Asn Gly Tyr Trp Asn Trp Lys Gly Ala Asn
 195 200 205
 Pro Glu Asp Trp Ile Glu Gly Ala Ala Val Ala Ala Lys Gln Asp Tyr
 210 215 220
 Pro Gly Val Val Asn Asp Thr Thr Lys Asp Trp Phe Val Lys Ala Ala
 225 230 235 240
 Val Ser Gln Glu Tyr Ala Asp Lys Trp Arg Ala Glu Val Thr Pro Val
 245 250 255
 Thr Gly Lys Arg Leu Met Glu Ala Gln Arg Val Thr Ala Gly Tyr Ile
 260 265 270
 His Leu Trp Phe Asp Thr Tyr Val Asn Arg
 275 280

<210> 3
<211> 852
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

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<400> 3
atgaaaagaa aaatttttagc tatacgcc  gtaattgctt taacagctcc tatccaaagt 60
gtggcggttg cgcataaaaa tggtcaccaa gatccaccaa ttgctctaaa gtggtcagca 120
gaatctatac ataatgaagg agtaagttct catttatgga ttgtaaacag agccattgtat 180
attatgtccc aaaatacgcac tggtgtgaag caaaatgaga cagctctatt aaatgaatgg 240
cgtagggatc tagagaaaagg catttactct gcggttattg aaaacccata ctatgataat 300
tccacattcg cttcacactt ctatgatcct gattcaggaa aaacgtatata tccatttgct 360
aaacaagcaa agcaaacagg agcggaaatata tttaaatttag ctggtaagc ttatcaaaat 420
aaagatctga aaaacgcatt cttttattta ggattatcac ttcaactattt agggatgtc 480
aaccacccaa tgcatgcagc aaactttact aatatttcgc atccatttggtt cttccactca 540
aaatatgaaa atttcgttga tacagtggaa gacaattata gagtaacggg tggaaatggc 600

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tatttggattt ggccaaagtgc aaatccagaa gagtgggttc atgcatcagc atcagcagca	660
aaagctgatttt tccatcaat tgttaatgat aagacgaaaa attgggtcct aaaaggcagct	720
gtatcacaag actctgctga taaatggcgt gcagaagtaa caccgataac aggaaaacgt	780
ttaatgaaag cgccggcgt tacagctgga tatatccatt tatggtttga tacgtacgtg	840
aataacaat aa	852

<210> 4
<211> 283
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<221> SIGNAL
<222> (1)...(24)

<400> 4
Met Lys Arg Lys Ile Leu Ala Ile Ala Ser Val Ile Ala Leu Thr Ala
1 5 10 15
Pro Ile Gln Ser Val Ala Phe Ala His Glu Asn Gly His Gln Asp Pro
20 25 30
Pro Ile Ala Leu Lys Trp Ser Ala Glu Ser Ile His Asn Glu Gly Val
35 40 45
Ser Ser His Leu Trp Ile Val Asn Arg Ala Ile Asp Ile Met Ser Gln
50 55 60
Asn Thr Thr Val Val Lys Gln Asn Glu Thr Ala Leu Leu Asn Glu Trp
65 70 75 80
Arg Thr Asp Leu Glu Lys Gly Ile Tyr Ser Ala Asp Tyr Glu Asn Pro
85 90 95
Tyr Tyr Asp Asn Ser Thr Phe Ala Ser His Phe Tyr Asp Pro Asp Ser
100 105 110
Gly Lys Thr Tyr Ile Pro Phe Ala Lys Gln Ala Lys Gln Thr Gly Ala
115 120 125
Lys Tyr Phe Lys Leu Ala Gly Glu Ala Tyr Gln Asn Lys Asp Leu Lys
130 135 140
Asn Ala Phe Phe Tyr Leu Gly Leu Ser Leu His Tyr Leu Gly Asp Val
145 150 155 160
Asn Gln Pro Met His Ala Ala Asn Phe Thr Asn Ile Ser His Pro Phe
165 170 175
Gly Phe His Ser Lys Tyr Glu Asn Phe Val Asp Thr Val Lys Asp Asn
180 185 190
Tyr Arg Val Thr Asp Gly Asn Gly Tyr Trp Asn Trp Gln Ser Ala Asn
195 200 205
Pro Glu Glu Trp Val His Ala Ser Ala Ser Ala Ala Lys Ala Asp Phe
210 215 220
Pro Ser Ile Val Asn Asp Lys Thr Lys Asn Trp Phe Leu Lys Ala Ala
225 230 235 240
Val Ser Gln Asp Ser Ala Asp Lys Trp Arg Ala Glu Val Thr Pro Ile
245 250 255
Thr Gly Lys Arg Leu Met Glu Ala Gln Arg Val Thr Ala Gly Tyr Ile
260 265 270
His Leu Trp Phe Asp Thr Tyr Val Asn Asn Lys
275 280

<210> 5
<211> 843

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 5

atgaaaagaa	aaatttttagc	tata	gttct	gtt	taacagctcc	tattcaaagt	60
gtggcg	tttg	cgc	atgc	atgc	atgtggcct	gatggtcagc	120
cataatgaag	gagtaagttc	tcatttatgg	attgt	aaaca	gagcaattga	tattatgtcc	180
caaaatacga	ctgtggt	gaa	gcaaaat	gag	acagctctat	taaatgaatg	240
ttggaggaag	gtat	ttt	tat	tgc	actatgataa	ttccacattc	300
gcttcacact	tctat	gatcc	tgat	tcagaa	aaaacgtata	ttccatttgc	360
aagcaaacgg	gag	caa	aaagta	ttttaaatta	gctggt	taaacaagca	420
aaaaatgcat	tctt	tttattt	aggattatca	ctt	cattt	tagggatgt	480
atgc	atgc	atgc	caaa	actttac	taacat	ttcg	540
aactc	gtt	g	ttt	ttcg	catccat	tttg	600
tggaaa	at	at	at	at	at	at	660
at	at	at	at	at	at	at	720
ttcc	cat	caa	at	cc	at	cc	780
gact	ctg	ctg	acaa	at	gg	cc	840
gcac	ac	ac	aa	at	gg	cc	843
taa							

<210> 6

<211> 280

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(24)

<400> 6

Met	Lys	Arg	Lys	Ile	Leu	Ala	Ile	Ala	Ser	Val	Ile	Ala	Leu	Thr	Ala
1				5					10					15	
Pro	Ile	Gln	Ser	Val	Ala	Phe	Ala	His	Glu	Ser	Asp	Gly	Pro	Ile	Ala
				20					25					30	
Leu	Arg	Trp	Ser	Ala	Glu	Ser	Val	His	Asn	Glu	Gly	Val	Ser	Ser	His
				35					40					45	
Leu	Trp	Ile	Val	Asn	Arg	Ala	Ile	Asp	Ile	Met	Ser	Gln	Asn	Thr	Thr
				50					55					60	
Val	Val	Lys	Gln	Asn	Glu	Thr	Ala	Leu	Leu	Asn	Glu	Trp	Arg	Thr	Asn
				65					70					80	
Leu	Glu	Glu	Gly	Ile	Tyr	Ser	Ala	Asp	Tyr	Lys	Asn	Pro	Tyr	Tyr	Asp
				85					90					95	
Asn	Ser	Thr	Phe	Ala	Ser	His	Phe	Tyr	Asp	Pro	Asp	Ser	Glu	Lys	Thr
				100					105					110	
Tyr	Ile	Pro	Phe	Ala	Lys	Gln	Ala	Lys	Gln	Thr	Gly	Ala	Lys	Tyr	Phe
				115					120					125	
Lys	Leu	Ala	Gly	Glu	Ala	Tyr	Gln	Asn	Lys	Asp	Leu	Lys	Asn	Ala	Phe
				130					135					140	
Phe	Tyr	Leu	Gly	Leu	Ser	Leu	His	Tyr	Leu	Gly	Asp	Val	Asn	Gln	Pro
				145					150					160	
Met	His	Ala	Ala	Asn	Phe	Thr	Asn	Ile	Ser	His	Pro	Phe	Gly	Phe	His
				165					170					175	

Ser Lys Tyr Glu Asn Phe Val Asp Thr Val Lys Asp Asn Tyr Arg Val
 180 185 190
 Thr Asp Gly Asp Gly Tyr Trp Asn Trp Lys Ser Ala Asn Pro Glu Glu
 195 200 205
 Trp Val His Ala Ser Ala Ser Ala Ala Lys Ala Asp Phe Pro Ser Ile
 210 215 220
 Val Asn Asp Asn Thr Lys Ser Trp Phe Leu Lys Ala Ala Val Ser Gln
 225 230 235 240
 Asp Ser Ala Asp Lys Trp Arg Ala Glu Val Thr Pro Val Thr Gly Lys
 245 250 255
 Arg Leu Met Glu Ala Gln Arg Ile Thr Ala Gly Tyr Ile His Leu Trp
 260 265 270
 Phe Asp Thr Tyr Val Asn Asn Lys
 275 280

<210> 7
 <211> 963
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 7

gtgattactt tgataaaaaa atgtttatta gtattgacga tgactctatt gtttaggggtt	60
ttcgtaccgc tgcagccatc acatgctact gaaaattatc caaatgattt taaaactgttg	120
caacataatg tattttattt gcctgaatca gtttcttattt ggggtcagga cgaacgtgca	180
gattatatga gtaatgcaga ttacttcaag ggacatgatg ctctgctctt aaatgagctt	240
tttgacaatg gaaattcgaa catgctgcta atgaacttat ccacggaata tccatatcaa	300
acgccagtgc ttggccgttc gatgagtggta tgggatgaaa ctagaggaag ctattctaat	360
tttgtacccg aagatggccg ttagcaattt atcagtaat gccaatcgt ggagaaaata	420
cagcatgttt acgcgaatgg ttgcgtgtca gactattatg caaataaaagg atttgtttat	480
gcaaaaagtac aaaaaggaaa taaattctat catcttatca gcactcatgc tcaagccgaa	540
gatactgggt gtgatcaggg tgaaggagca gaaattcgtc attcacagt tcaagaaaatc	600
aacgacttta ttaaaaataa aaacattccg aaagatgaag tggattttat tggtgtgtac	660
ttaatgtga tgaagagtga cacaacagag tacaatagca ttttatcaac attaaatgtc	720
aatgcgccta cggaatattt agggcatagc tctacttggg acccagaaac gaacagcatt	780
acaggttaca attaccctga ttatgcgcca cagcatttag attatatttt tggaaaaaaa	840
gatcataaac aaccaagttc atggtaat gaaacgatta ctccgaagtc tccaacttgg	900
aaggcaatct atgagtataa tgattattcc gatcactatc ctgttaaagc atacgtaaaa	960
taa	963

<210> 8
 <211> 320
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(29)

<400> 8

Met Ile Thr Leu Ile Lys Lys Cys Leu Leu Val Leu Thr Met Thr Leu	
5 10 15	
Leu Leu Gly Val Phe Val Pro Leu Gln Pro Ser His Ala Thr Glu Asn	

20	25	30
Tyr Pro Asn Asp Phe Lys Leu Leu Gln His Asn Val Phe Leu Leu Pro		
35	40	45
Glu Ser Val Ser Tyr Trp Gly Gln Asp Glu Arg Ala Asp Tyr Met Ser		
50	55	60
Asn Ala Asp Tyr Phe Lys Gly His Asp Ala Leu Leu Leu Asn Glu Leu		
65	70	75
Phe Asp Asn Gly Asn Ser Asn Met Leu Leu Met Asn Leu Ser Thr Glu		
85	90	95
Tyr Pro Tyr Gln Thr Pro Val Leu Gly Arg Ser Met Ser Gly Trp Asp		
100	105	110
Glu Thr Arg Gly Ser Tyr Ser Asn Phe Val Pro Glu Asp Gly Gly Val		
115	120	125
Ala Ile Ile Ser Lys Trp Pro Ile Val Glu Lys Ile Gln His Val Tyr		
130	135	140
Ala Asn Gly Cys Gly Ala Asp Tyr Tyr Ala Asn Lys Gly Phe Val Tyr		
145	150	155
Ala Lys Val Gln Lys Gly Asp Lys Phe Tyr His Leu Ile Ser Thr His		
165	170	175
Ala Gln Ala Glu Asp Thr Gly Cys Asp Gln Gly Glu Gly Ala Glu Ile		
180	185	190
Arg His Ser Gln Phe Gln Glu Ile Asn Asp Phe Ile Lys Asn Lys Asn		
195	200	205
Ile Pro Lys Asp Glu Val Val Phe Ile Gly Gly Asp Phe Asn Val Met		
210	215	220
Lys Ser Asp Thr Thr Glu Tyr Asn Ser Met Leu Ser Thr Leu Asn Val		
225	230	235
Asn Ala Pro Thr Glu Tyr Leu Gly His Ser Ser Thr Trp Asp Pro Glu		
245	250	255
Thr Asn Ser Ile Thr Gly Tyr Asn Tyr Pro Asp Tyr Ala Pro Gln His		
260	265	270
Leu Asp Tyr Ile Phe Val Glu Lys Asp His Lys Gln Pro Ser Ser Trp		
275	280	285
Val Asn Glu Thr Ile Thr Pro Lys Ser Pro Thr Trp Lys Ala Ile Tyr		
290	295	300
Glu Tyr Asn Asp Tyr Ser Asp His Tyr Pro Val Lys Ala Tyr Val Lys		
305	310	315
		320

<210> 9

<211> 999

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 9

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gatacactta aagtaatggc ttataatatt atgcaactaa acgtacaaga ttgggatcaa	120
gcaaatcgtg cacagcgctt gccaaacgtc atatctcaat taagtgacag tcctgtatgtc	180
attcttatca gcgaaggcgtt tagcagccaa tcagaatctg cgttagcgcg acttgctcaa	240
ctttaccctt atcaaactcc caatgttggc gaagactgta gtggcgctgg ctggcaaagc	300
ttaacggta actgctcgaa tagccccctt gtgatccgcg gtggagtggt gattttatct	360
aagtacccca tcattacgca aaaagcccat gtgttaata acagcctgac tgatagttgg	420
gattatttag caaacaaaagg ttgcgttat gttgaaatag aaaaacatgg caaacgttac	480
caccttattt gcacgcattt acaagcaacg catgatggcg acacagaagc tgagcatatt	540
gtgagaatgg gtcaattaca agagatacaa gatttcattc aaagcgagca aattcacact	600

tctgagccgg tcattatcg	cggtgatatg aacgttagt	ggagcaagca atctgaaatt	660
acagatatgc tcgaagtgg	tcgcagccgt ctaatttca	acacacctga agttggctct	720
ttctctgcaa aacacaactg	gtttacaaa gctaaccct	actatttcga ctacagctta	780
gagtataacg acacgctcg	ttatgtactt tggcatgcag	accataagca acccaccaat	840
acccccagaaa ttgttagtacg	ttacccaaaa gcagagcgtg	actttactg gcgttactta	900
cgcggaaatt ggaaccttacc	ttctggccgt tattatcatg	atggatacta taacgaactg	960
tctgatcact acccagtgc	agttaacttt gaattttaa		999

<210> 10

<211> 332

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(20)

<400> 10			
Met Lys Leu Leu Arg Val Phe Val Cys Val Phe Ala Leu Leu Ser Ala			
1	5	10	15
His Ser Lys Ala Asp Thr Leu Lys Val Met Ala Tyr Asn Ile Met Gln			
20	25	30	
Leu Asn Val Gln Asp Trp Asp Gln Ala Asn Arg Ala Gln Arg Leu Pro			
35	40	45	
Asn Val Ile Ser Gln Leu Ser Asp Ser Pro Asp Val Ile Leu Ile Ser			
50	55	60	
Glu Ala Phe Ser Ser Gln Ser Glu Ser Ala Leu Ala Gln Leu Ala Gln			
65	70	75	80
Leu Tyr Pro Tyr Gln Thr Pro Asn Val Gly Glu Asp Cys Ser Gly Ala			
85	90	95	
Gly Trp Gln Ser Leu Thr Gly Asn Cys Ser Asn Ser Pro Phe Val Ile			
100	105	110	
Arg Gly Gly Val Val Ile Leu Ser Lys Tyr Pro Ile Ile Thr Gln Lys			
115	120	125	
Ala His Val Phe Asn Asn Ser Leu Thr Asp Ser Trp Asp Tyr Leu Ala			
130	135	140	
Asn Lys Gly Phe Ala Tyr Val Glu Ile Glu Lys His Gly Lys Arg Tyr			
145	150	155	160
His Leu Ile Gly Thr His Leu Gln Ala Thr His Asp Gly Asp Thr Glu			
165	170	175	
Ala Glu His Ile Val Arg Met Gly Gln Leu Gln Glu Ile Gln Asp Phe			
180	185	190	
Ile Gln Ser Glu Gln Ile His Thr Ser Glu Pro Val Ile Ile Gly Gly			
195	200	205	
Asp Met Asn Val Glu Trp Ser Lys Gln Ser Glu Ile Thr Asp Met Leu			
210	215	220	
Glu Val Val Arg Ser Arg Leu Ile Phe Asn Thr Pro Glu Val Gly Ser			
225	230	235	240
Phe Ser Ala Lys His Asn Trp Phe Thr Lys Ala Asn Ala Tyr Tyr Phe			
245	250	255	
Asp Tyr Ser Leu Glu Tyr Asn Asp Thr Leu Asp Tyr Val Leu Trp His			
260	265	270	
Ala Asp His Lys Gln Pro Thr Asn Thr Pro Glu Met Leu Val Arg Tyr			
275	280	285	
Pro Lys Ala Glu Arg Asp Phe Tyr Trp Arg Tyr Leu Arg Gly Asn Trp			

290	295	300
Asn Leu Pro Ser Gly Arg Tyr Tyr His Asp Gly Tyr Tyr Asn Glu Leu		
305	310	315
Ser Asp His Tyr Pro Val Gln Val Asn Phe Glu Phe		
	325	330

<210> 11

<211> 1041

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 11

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ggaacaagtgc caggggctat taacgctctc attttttcgc tggctttac cattaaagag	180
cagcaggata ttctcaattc caccaacttc agggagttt tggacagctc tttcggttt	240
gtgcgaaact tcagaaggct ctggagtgaa ttcgggttgg accgcggta tgtgtttcg	300
gagtggcgag gagagctggt gaaagagaaa ctcggcaaga agaacgcac cttcggtcgat	360
ctgaaaaaaag cgaagcgccc cgatctctac gttatcgaa ccaacctctc caccgggtt	420
tccgagactt ttccgcatga acgccacgccc aacatgcgc tggtggatgc ggtgcggatc	480
agcatgtcga tccccgtctt ttttgcggca cgcagacttgc gaaacacgaag cgatgtgtat	540
gtggatggag gtgttatgct caactaccgg gtaaagctgt tcgacaggaa gaaatacata	600
gatttggaga aggagaaaaga ggcagcccgc tacgtggagt actacaatca agagaatgcc	660
cggtttctgc ttgagcggcc cggccgaagc ccgtacgtt acaaaccggca gacccttaggc	720
ctgcggctcg actcgcaggaa agagatcgcc ctgttccgtt acgatgagcc gctgaaggc	780
aaacagatca accgcttccc cgaatatgcc aaagccctga tcggtgact gatgcagggt	840
caggagaaca tccacctgaa aagcgacgac tggcagcgaa cgctctacat caacacgctg	900
gatgtggta ccacagatt cgacattaat gacgagaaga aaaaagtgt ggtgaatgag	960
ggaatcaagg gacggaaac ctacttccgc tggtttggagg atcccgaagc taaaccgggt	1020
aacaagggtgg atttggctcg a	1041

<210> 12

<211> 346

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 12

Met Ala Ser Gln Phe Arg Asn Leu Val Phe Glu Gly Gly Val Lys			
1	5	10	15
Gly Ile Ala Tyr Ile Gly Ala Met Gln Val Leu Glu Gln Arg Gly His			
20	25	30	
Leu Glu His Val Val Arg Val Gly Gly Thr Ser Ala Gly Ala Ile Asn			
35	40	45	
Ala Leu Ile Phe Ser Leu Gly Phe Thr Ile Lys Glu Gln Gln Asp Ile			
50	55	60	
Leu Asn Ser Thr Asn Phe Arg Glu Phe Met Asp Ser Ser Phe Gly Phe			
65	70	75	80
Val Arg Asn Phe Arg Arg Leu Trp Ser Glu Phe Gly Trp Asn Arg Gly			
85	90	95	
Asp Val Phe Ser Glu Trp Ala Gly Glu Leu Val Lys Glu Lys Leu Gly			
100	105	110	

Lys Lys Asn Ala Thr Phe Gly Asp Leu Lys Ala Lys Arg Pro Asp
 115 120 125
 Leu Tyr Val Ile Gly Thr Asn Leu Ser Thr Gly Phe Ser Glu Thr Phe
 130 135 140
 Ser His Glu Arg His Ala Asn Met Pro Leu Val Asp Ala Val Arg Ile
 145 150 155 160
 Ser Met Ser Ile Pro Leu Phe Phe Ala Ala Arg Arg Leu Gly Lys Arg
 165 170 175
 Ser Asp Val Tyr Val Asp Gly Gly Val Met Leu Asn Tyr Pro Val Lys
 180 185 190
 Leu Phe Asp Arg Glu Lys Tyr Ile Asp Leu Glu Lys Glu Lys Glu Ala
 195 200 205
 Ala Arg Tyr Val Glu Tyr Tyr Asn Gln Glu Asn Ala Arg Phe Leu Leu
 210 215 220
 Glu Arg Pro Gly Arg Ser Pro Tyr Val Tyr Asn Arg Gln Thr Leu Gly
 225 230 235 240
 Leu Arg Leu Asp Ser Gln Glu Glu Ile Gly Leu Phe Arg Tyr Asp Glu
 245 250 255
 Pro Leu Lys Gly Lys Gln Ile Asn Arg Phe Pro Glu Tyr Ala Lys Ala
 260 265 270
 Leu Ile Gly Ala Leu Met Gln Val Gln Glu Asn Ile His Leu Lys Ser
 275 280 285
 Asp Asp Trp Gln Arg Thr Leu Tyr Ile Asn Thr Leu Asp Val Gly Thr
 290 295 300
 Thr Asp Phe Asp Ile Asn Asp Glu Lys Lys Lys Val Leu Val Asn Glu
 305 310 315 320
 Gly Ile Lys Gly Ala Glu Thr Tyr Phe Arg Trp Phe Glu Asp Pro Glu
 325 330 335
 Ala Lys Pro Val Asn Lys Val Asp Leu Val
 340 345

<210> 13
<211> 1038
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 13
atgacaacac aatttagaaa cttgatattt gaaggcgccg gtgtaaaagg tggcgttac 60
attggcgcca tgcagattct cgaaaatcgt ggctgttgc aagatattca cagactcgga 120
gggtcagtgcggatc caacgcgtg attttcgtgc tggttacac ggtccgtgag 180
caaaaagaga tcttacaagc cacggatttt aaccagttt tgataactc ttgggggtt 240
attcgtgata ttccgaggct tgctcgagac ttggctggc acaagggtga cttcttaat 300
agctggatag gtgatttgat tcatcgctgt ttggggaaatc gccgagcgac gttcaaagat 360
ctgcaaaagg ccaagcttcc tgatcttat gtcatcggtt ctaatctgtc tacagggtat 420
gcagagggtt tttcagccga aagacacccc gatatggagc tagcgacagc ggtgcgtatc 480
tccatgtcga taccgctgtt ctggcgcc gtcgtcacg gtgaacgaca agatgtgtat 540
gtcgatgggg gtgttcaact taactatccg attaaactgt ttgatcggtt gcgttacatt 600
gatctggtca aagatccccg tgccgttccg cgaacgggtt attacaacaa agaaaaacgct 660
cgcttcgcgttccatcgatc ttgagcgcc gggccatagc ccctatgtt acaatcgcca gaccttgggt 720
ttgcgactgg atagtcgaga ggagataggg ctcttcgtt atgacgaaacc cctcaaggcc 780
aaaccattt agtccttcac tgactacgct cgacaactt tcggtgcgtt gatgaatgca 840
cagaaaaaca ttcatctaca tggcgatgtat tggcgccca cggcttatat cgatacattt 900
gatgtggta cgacggattt caatcttct gatgcaacca agcaagcact gattgagcaa 960
ggaattaacg gcaccgaaaa ttatccgac tggttgata atccgtttaga gaaggctgtg 1020

1038

aatagagtgg agtcatacg

<210> 14

<211> 345

<212> PRT

<213> Unknown -

<220>

<223> Obtained from an environmental sample.

<400> 14

Met Thr Thr Gln Phe Arg Asn Leu Ile Phe Glu Gly Gly Gly Val Lys
1 5 10 15
Gly Val Ala Tyr Ile Gly Ala Met Gln Ile Leu Glu Asn Arg Gly Val
20 25 30
Leu Gln Asp Ile His Arg Val Gly Gly Cys Ser Ala Gly Ala Ile Asn
35 40 45
Ala Leu Ile Phe Ala Leu Gly Tyr Thr Val Arg Glu Gln Lys Glu Ile
50 55 60
Leu Gln Ala Thr Asp Phe Asn Gln Phe Met Asp Asn Ser Trp Gly Val
65 70 75 80
Ile Arg Asp Ile Arg Arg Leu Ala Arg Asp Phe Gly Trp His Lys Gly
85 90 95
Asp Phe Phe Asn Ser Trp Ile Gly Asp Leu Ile His Arg Arg Leu Gly
100 105 110
Asn Arg Arg Ala Thr Phe Lys Asp Leu Gln Lys Ala Lys Leu Pro Asp
115 120 125
Leu Tyr Val Ile Gly Thr Asn Leu Ser Thr Gly Tyr Ala Glu Val Phe
130 135 140
Ser Ala Glu Arg His Pro Asp Met Glu Leu Ala Thr Ala Val Arg Ile
145 150 155 160
Ser Met Ser Ile Pro Leu Phe Phe Ala Ala Val Arg His Gly Glu Arg
165 170 175
Gln Asp Val Tyr Val Asp Gly Gly Val Gln Leu Asn Tyr Pro Ile Lys
180 185 190
Leu Phe Asp Arg Glu Arg Tyr Ile Asp Leu Val Lys Asp Pro Gly Ala
195 200 205
Val Arg Arg Thr Gly Tyr Tyr Asn Lys Glu Asn Ala Arg Phe Gln Leu
210 215 220
Glu Arg Pro Gly His Ser Pro Tyr Val Tyr Asn Arg Gln Thr Leu Gly
225 230 235 240
Leu Arg Leu Asp Ser Arg Glu Glu Ile Gly Leu Phe Arg Tyr Asp Glu
245 250 255
Pro Leu Lys Gly Lys Pro Ile Lys Ser Phe Thr Asp Tyr Ala Arg Gln
260 265 270
Leu Phe Gly Ala Leu Met Asn Ala Gln Glu Asn Ile His Leu His Gly
275 280 285
Asp Asp Trp Ala Arg Thr Val Tyr Ile Asp Thr Leu Asp Val Gly Thr
290 295 300
Thr Asp Phe Asn Leu Ser Asp Ala Thr Lys Gln Ala Leu Ile Glu Gln
305 310 315 320
Gly Ile Asn Gly Thr Glu Asn Tyr Phe Asp Trp Phe Asp Asn Pro Leu
325 330 335
Glu Lys Pro Val Asn Arg Val Glu Ser
340 345

<210> 15

<211> 1344

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 15

atgctggtca	tcattcatgg	ctggagcgat	gaggcgggct	cgttcaagac	cctggccaga	60
cgttggcca	aggcgccacc	cgagggcctc	gggacgcagg	tcacggaaat	ccatctgggt	120
gattatgtgt	ccctggatga	ccaggtgacg	ttcaatgatc	tgtcgatgc	catggccaga	180
gcctggagcg	atcgtggct	gcccacggcc	ccgcgcagcg	tcgatgccgt	cgtcacagc	240
accggcggcc	tggtgatcgg	cgactggctc	acgcagctgt	acacgcccgg	aacagcccc	300
attcgtcgcc	tgctgatgct	cgctccggcc	aatttggct	cgccgctggc	acacacccgg	360
cgcagcatga	tcggccgggt	caccaagggc	tggaaggcga	cgcggcttct	tgaaacgggc	420
aagcacattc	tcaaaggcgt	cgaactggcc	agcccctacg	cctggggcgt	ggccgaacgc	480
gatctgttca	gcgatcagaa	ctattatggc	gccggggcga	tcctgtgcac	tgtcctgggt	540
ggcaacgccc	tttatcgccg	catcagcgcc	gtcgccaaacc	ggcccccggc	ggacggcacc	600
gtgcgcgtca	gcagcgccaa	tctccaagcg	gccaggatgc	tgctcgattt	cagcggccagt	660
ccacaggctg	agccggaaatt	caccctgcac	gacagcaccg	cggaaattgc	cttcggcatc	720
gccgacgagg	aagaccacag	caccatcgcc	gccaaggatc	gccccccgg	caaggcagtc	780
acctggaaac	tgattctcaa	agccctgcag	atcgagatg	caagctttgc	tcaatggtc	840
cggcagatgc	aggagcattc	cgcggccgt	acggaaacgg	cggaaaagcg	ccgcaatgtt	900
cactacaaca	gcttccagaa	taccgtcg	cgcgtgg	acaaccacgg	tgccgcccgt	960
caggattatc	tcatcgagtt	ttacatgaat	gatgatcgca	aactccgcga	tcagcgcctc	1020
acccagcgcc	tgcaggagca	ggtGattacc	aacgtgcacg	gctacgggt	cgacaagtcc	1080
tatcgagca	tgctgatcaa	ctgcacggag	ctctatgcgc	tgatgtccag	accgcaggat	1140
cgcctgaaca	ttagatcac	cgcctatccg	gatctctcca	agggactgg	ggggatatcgc	1200
acctacacgg	acgaggat	cggccctc	tctctggatg	cagcgcagat	ccgaaagctc	1260
tttaagccgc	accgtaccc	gttgcata	ctgtgcctgc	aacgctatca	gaaagatgat	1320
gtgttccgat	tcaggatgt	ttga				1344

<210> 16

<211> 447

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 16

Met	Leu	Val	Ile	Ile	His	Gly	Trp	Ser	Asp	Glu	Ala	Gly	Ser	Phe	Lys
1															15
10															
Thr	Leu	Ala	Arg	Arg	Leu	Ala	Lys	Ala	Pro	Pro	Glu	Gly	Leu	Gly	Thr
20															
25															30
Gln	Val	Thr	Glu	Ile	His	Leu	Gly	Asp	Tyr	Val	Ser	Leu	Asp	Asp	Gln
35															
40															45
Val	Thr	Phe	Asn	Asp	Leu	Val	Asp	Ala	Met	Ala	Arg	Ala	Trp	Ser	Asp
50															
55															60
Arg	Gly	Leu	Pro	Thr	Ala	Pro	Arg	Ser	Val	Asp	Ala	Val	Val	His	Ser
65															80
70															
75															
Thr	Gly	Gly	Leu	Val	Ile	Arg	Asp	Trp	Leu	Thr	Gln	Leu	Tyr	Thr	Pro
85															95
Glu	Thr	Ala	Pro	Ile	Arg	Arg	Leu	Leu	Met	Leu	Ala	Pro	Ala	Asn	Phe
100															
105															110
Gly	Ser	Pro	Leu	Ala	His	Thr	Gly	Arg	Ser	Met	Ile	Gly	Arg	Val	Thr
115															
120															125

Lys Gly Trp Lys Gly Thr Arg Leu Phe Glu Thr Gly Lys His Ile Leu
 130 135 140
 Lys Gly Leu Glu Leu Ala Ser Pro Tyr Ala Trp Ala Leu Ala Glu Arg
 145 150 155 160
 Asp Leu Phe Ser Asp Gln Asn Tyr Tyr Gly Ala Gly Arg Ile Leu Cys
 -165 170 175
 Thr Val Leu Val Gly Asn Ala Gly Tyr Arg Gly Ile Ser Ala Val Ala
 180 185 190
 Asn Arg Pro Gly Thr Asp Gly Thr Val Arg Val Ser Ser Ala Asn Leu
 195 200 205
 Gln Ala Ala Arg Met Leu Leu Asp Phe Ser Ala Ser Pro Gln Ala Glu
 210 215 220
 Pro Glu Phe Thr Leu His Asp Ser Thr Ala Glu Ile Ala Phe Gly Ile
 225 230 235 240
 Ala Asp Glu Glu Asp His Ser Thr Ile Ala Ala Lys Asp Arg Gly Pro
 245 250 255
 Arg Lys Ala Val Thr Trp Glu Leu Ile Leu Lys Ala Leu Gln Ile Glu
 260 265 270
 Asp Ala Ser Phe Ala Gln Trp Cys Arg Gln Met Gln Glu His Ser Ala
 275 280 285
 Ala Val Thr Glu Thr Ala Glu Lys Arg Arg Asn Val His Tyr Asn Ser
 290 295 300
 Phe Gln Asn Thr Val Val Arg Val Val Asp Asn His Gly Ala Ala Val
 305 310 315 320
 Gln Asp Tyr Leu Ile Glu Phe Tyr Met Asn Asp Asp Arg Lys Leu Arg
 325 330 335
 Asp Gln Arg Leu Thr Gln Arg Leu Gln Glu Gln Val Ile Thr Asn Val
 340 345 350
 His Gly Tyr Gly Asp Asp Lys Ser Tyr Arg Ser Met Leu Ile Asn Cys
 355 360 365
 Thr Glu Leu Tyr Ala Leu Met Ser Arg Pro Gln Asp Arg Leu Asn Ile
 370 375 380
 Ser Ile Thr Ala Tyr Pro Asp Leu Ser Lys Gly Leu Val Gly Tyr Arg
 385 390 395 400
 Thr Tyr Thr Asp Glu Asp Ile Gly Ser Leu Ser Leu Asp Ala Ala Gln
 405 410 415
 Ile Arg Lys Leu Phe Lys Pro His Arg Thr Leu Leu Met Thr Leu Cys
 420 425 430
 Leu Gln Arg Tyr Gln Lys Asp Asp Val Phe Arg Phe Arg Asp Val
 435 440 445

<210> 17

<211> 1137

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 17

atgaaaaaaaaa	gcttcaaca	acatcttgcc	gctgacggca	gcccaaagaa	tatttttct	60
ctcgacgggg	gaggaatcag	aggggcttg	acccttgggt	ttctcaaaaa	aatagaaaagc	120
atcctgcagg	aaaaacatgg	gaaggactat	ctccttgcg	atcactttga	tttgatcggt	180
ggaacctcca	caggctccat	cattgcagca	gcattggcta	taggcatgac	agtggaggaa	240
atcaaaaaa	tgtatatgga	tctggcgga	aaaatttcg	gcaagaaaag	gagttctgg	300
agaccctggg	aaactgcgaa	atacttgaaa	gcaggatatg	accacaaagc	tcttggaaaag	360
agtctgaaag	atgctttcca	ggattttctt	tttaggaagtg	accaaattag	aacaggtctt	420

tgtatagtag cccaaagac agataccaat agtatatggc cattgattaa ccaccccaa	480
ggaaaattct atgattcaga acaaggcaaa aacaaaaata tccccttatg gcaggcagta	540
agggcgagta ccgctgctcc aacctatttc gctccacaat taatagatgt gggtgatggt	600
caaaaaggctg cttttgtgga cggaggggta agcatggca ataaccgc attaaccctg	660
ttaaaagtgg ctacacttaa aggtttcct tttcattggc caatggaga agacaaactg	720
accatagttt cagtaggcac cggatatagt gtttccaaa gacaaaaggg tgaaatcacc	780
aaagcttcct tattaacttg gccaaaaac gtcccgaaa tggatgatgca ggatgcttct	840
tggcagaatc agaccatact tcagtgatt tctaaatccc ccactgcaca ttccatagat	900
atggaaatgg aagaccttag agatgactt ctaggcgaa gaccactcat caaataccctc	960
aggtacaact tccccttgc agtaaatgat ctaatggat tgaagcttgg gaaaagctt	1020
acccaaaaag agtgcagaaga ttgggtggaa atgagcaatg cacataaccg agaggagttg	1080
tataggattt gggagaaggc ggctgaaggc tcggtaaaaa aagaacattt tgaataa	1137

<210> 18

<211> 378

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 18

Met Lys Lys Ser Leu Gln Gln His Leu Ala Ala Asp Gly Ser Pro Lys	
1 5 10 15	
Asn Ile Leu Ser Leu Asp Gly Gly Ile Arg Gly Ala Leu Thr Leu	
20 25 30	
Gly Phe Leu Lys Lys Ile Glu Ser Ile Leu Gln Glu Lys His Gly Lys	
35 40 45	
Asp Tyr Leu Leu Cys Asp His Phe Asp Leu Ile Gly Gly Thr Ser Thr	
50 55 60	
Gly Ser Ile Ile Ala Ala Ala Leu Ala Ile Gly Met Thr Val Glu Glu	
65 70 75 80	
Ile Thr Lys Met Tyr Met Asp Leu Gly Gly Lys Ile Phe Gly Lys Lys	
85 90 95	
Arg Ser Phe Trp Arg Pro Trp Glu Thr Ala Lys Tyr Leu Lys Ala Gly	
100 105 110	
Tyr Asp His Lys Ala Leu Glu Lys Ser Leu Lys Asp Ala Phe Gln Asp	
115 120 125	
Phe Leu Leu Gly Ser Asp Gln Ile Arg Thr Gly Leu Cys Ile Val Ala	
130 135 140	
Lys Arg Ala Asp Thr Asn Ser Ile Trp Pro Leu Ile Asn His Pro Lys	
145 150 155 160	
Gly Lys Phe Tyr Asp Ser Glu Gln Gly Lys Asn Lys Asn Ile Pro Leu	
165 170 175	
Trp Gln Ala Val Arg Ala Ser Thr Ala Ala Pro Thr Tyr Phe Ala Pro	
180 185 190	
Gln Leu Ile Asp Val Gly Asp Gly Gln Lys Ala Ala Phe Val Asp Gly	
195 200 205	
Gly Val Ser Met Ala Asn Asn Pro Ala Leu Thr Leu Leu Lys Val Ala	
210 215 220	
Thr Leu Lys Gly Phe Pro Phe His Trp Pro Met Gly Glu Asp Lys Leu	
225 230 235 240	
Thr Ile Val Ser Val Gly Thr Gly Tyr Ser Val Phe Gln Arg Gln Lys	
245 250 255	
Gly Glu Ile Thr Lys Ala Ser Leu Leu Thr Trp Ala Lys Asn Val Pro	
260 265 270	
Glu Met Leu Met Gln Asp Ala Ser Trp Gln Asn Gln Thr Ile Leu Gln	

275	280	285
Trp Ile Ser Lys Ser Pro Thr Ala His Ser Ile Asp Met Glu Met Glu		
290	295	300
Asp Leu Arg Asp Asp Phe Leu Gly Gly Arg Pro Leu Ile Lys Tyr Leu		
305	310	315
Arg Tyr Asn Phe-Pro Leu Thr Val Asn Asp Leu Asn Gly Leu Lys Leu		
325	330	335
Gly Lys Ser Phe Thr Gln Lys Glu Val Glu Asp Leu Val Glu Met Ser		
340	345	350
Asn Ala His Asn Arg Glu Glu Leu Tyr Arg Ile Gly Glu Lys Ala Ala		
355	360	365
Glu Gly Ser Val Lys Lys Glu His Phe Glu		
370	375	

<210> 19

<211> 1248

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 19

atgaaaaaga caacgttagt tttggctcta ttgatgccat ttggtgccgc ctccgcacaa	60
gacaatagta tgactccaga agcaatcaca tcagctcaag tcgcacaaac acaatcagcc	120
tccacctata cctacgttag gtgttgttat cgaacagacg caagccatga ttcaccagca	180
accgactggg agtgggctag aaaggaaaac ggagactatt acaccatiga cggttactgg	240
tggtcatcga tctcctttaa aaatatgttc tatagcgaga ctccctaaca agagatcaag	300
cagcgttgtg tagacacaccc ttgatgttcg cacgacaaag ccgacatcac ctactttgcc	360
gctgacaacc gcttctctta caaccattct atctggacta acgatcacgg ctttcaagcg	420
aaccaaatac accgaataagt cgctttggc gatagtcttt cagacacggg caacctattt	480
aatgggtcac aatggatttt ccctaaccct aattcttggt tcttgggtca cttctctaacc	540
ggcttcgttt gactgaata cttggctaac gctaaggcg ttccactcta taactggct	600
gtgggtggcg cagcaggaac caaccaatat gtcgctctaa ctggtgtcta tgatcaggc	660
acttcgtacc tgacttacat gaagatggcg aaaaattatc gccagagaaa cacactattc	720
acattagagt ttggattgaa tgactttatg aattacggac gtgaagtagc tgatgtaaaa	780
gctgacttta gtagcgcact gattgcctc accgacgtg ggcaaaaaaaaa cattotgttg	840
ttcacccctac cagatgcgac caaagccccct cagtttaagt actcaacggc ccaagaaatc	900
gagacagttc gtggcaagat tctggcggtc aaccagttca tcaaagaaca agcagagtac	960
tatcaaagca aaggtgacaa cgtgatccta tttgatgcgc acgctctatt ctctagcatc	1020
accagcgacc cacaaaaaaca cgggttcaga aacgaaaaag atgcctgcct agatattaat	1080
cgtatgtcat ctcaagacta cctatacagc catagctga ccaacgactg tgcaacctat	1140
ggttctgata gctatgtatt ttggggcgta acacacccaa ccacagcaac tcataaaatac	1200
atcgcaacgc atatactgtat gaattcaatg tcgacccctcg acttttaa	1248

<210> 20

<211> 415

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(19)

<400> 20

Met Lys Lys Thr Thr Leu Val Leu Ala Leu Leu Met Pro Phe Gly Ala
 1 5 10 15
 Ala Ser Ala Gln Asp Asn Ser Met Thr Pro Glu Ala Ile Thr Ser Ala
 20 25 30
 Gln Val Ala Gln Thr Gln Ser Ala Ser Thr Tyr Thr Tyr Val Arg Cys
 35 - 40 45
 Trp Tyr Arg Thr Asp Ala Ser His Asp Ser Pro Ala Thr Asp Trp Glu
 50 55 60
 Trp Ala Arg Lys Glu Asn Gly Asp Tyr Tyr Thr Ile Asp Gly Tyr Trp
 65 70 75 80
 Trp Ser Ser Ile Ser Phe Lys Asn Met Phe Tyr Ser Glu Thr Pro Gln
 85 90 95
 Gln Glu Ile Lys Gln Arg Cys Val Asp Thr Leu Asp Val Gln His Asp
 100 105 110
 Lys Ala Asp Ile Thr Tyr Phe Ala Ala Asp Asn Arg Phe Ser Tyr Asn
 115 120 125
 His Ser Ile Trp Thr Asn Asp His Gly Phe Gln Ala Asn Gln Ile Asn
 130 135 140
 Arg Ile Val Ala Phe Gly Asp Ser Leu Ser Asp Thr Gly Asn Leu Phe
 145 150 155 160
 Asn Gly Ser Gln Trp Ile Phe Pro Asn Pro Asn Ser Trp Phe Leu Gly
 165 170 175
 His Phe Ser Asn Gly Phe Val Trp Thr Glu Tyr Leu Ala Asn Ala Lys
 180 185 190
 Gly Val Pro Leu Tyr Asn Trp Ala Val Gly Ala Ala Gly Thr Asn
 195 200 205
 Gln Tyr Val Ala Leu Thr Gly Val Tyr Asp Gln Val Thr Ser Tyr Leu
 210 215 220
 Thr Tyr Met Lys Met Ala Lys Asn Tyr Arg Pro Glu Asn Thr Leu Phe
 225 230 235 240
 Thr Leu Glu Phe Gly Leu Asn Asp Phe Met Asn Tyr Gly Arg Glu Val
 245 250 255
 Ala Asp Val Lys Ala Asp Phe Ser Ser Ala Leu Ile Arg Leu Thr Asp
 260 265 270
 Ala Gly Ala Lys Asn Ile Leu Leu Phe Thr Leu Pro Asp Ala Thr Lys
 275 280 285
 Ala Pro Gln Phe Lys Tyr Ser Thr Ala Gln Glu Ile Glu Thr Val Arg
 290 295 300
 Gly Lys Ile Leu Ala Phe Asn Gln Phe Ile Lys Glu Gln Ala Glu Tyr
 305 310 315 320
 Tyr Gln Ser Lys Gly Asp Asn Val Ile Leu Phe Asp Ala His Ala Leu
 325 330 335
 Phe Ser Ser Ile Thr Ser Asp Pro Gln Lys His Gly Phe Arg Asn Ala
 340 345 350
 Lys Asp Ala Cys Leu Asp Ile Asn Arg Ser Ala Ser Gln Asp Tyr Leu
 355 360 365
 Tyr Ser His Ser Leu Thr Asn Asp Cys Ala Thr Tyr Gly Ser Asp Ser
 370 375 380
 Tyr Val Phe Trp Gly Val Thr His Pro Thr Thr Ala Thr His Lys Tyr
 385 390 395 400
 Ile Ala Thr His Ile Leu Met Asn Ser Met Ser Thr Phe Asp Phe
 405 410 415

<210> 21

<211> 1716

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<210> 22

<211> 571

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1) . . . (28)

<400> 22

Met	Gln	Gln	His	Lys	Leu	Arg	Asn	Phe	Asn	Lys	Gly	Leu	Thr	Gly	Vai
1				5					10					15	
Val	Leu	Ser	Val	Leu	Thr	Ser	Thr	Ser	Ala	Met	Ala	Phe	Thr	Gln	Ile
				20				25					30		
Gly	Gly	Gly	Gly	Ala	Ile	Pro	Met	Gly	His	Glu	Trp	Leu	Thr	Arg	Arg
				35			40				45				
Ser	Ala	Leu	Glu	Leu	Leu	Asn	Ala	Asp	His	Ile	Val	Ser	Asn	Asp	Pro
				50			55				60				
Leu	Asp	Pro	Arg	Leu	Gly	Trp	Ser	Gln	Gly	Leu	Ala	Lys	Asn	Leu	Asp
				65			70			75				80	

Leu Ser Asn Ala Leu Asn Glu Val Gln Arg Ile Gln Ser Val Thr Lys
 85 90 95

Thr Asn Ala Leu Tyr Glu Pro Arg Tyr Asp Asp Val Phe Ser Ala Ile
 100 105 110

Val Gly Glu Arg Trp Val Asp Thr Ala Gly Phe Asn Val Ala Lys Ala
 115 120 125

Thr Val Gly Lys Ile Asp Cys Phe Ser Ala Val Ala Gln Glu Pro Ala
 130 135 140

Asp Val Gln Gln Asp His Phe Met Arg Arg Tyr Asp Asp Val Gly Gly
 145 150 155 160

Gln Gly Gly Val Asn Ala Ala Arg Arg Gly Gln Gln Arg Phe Ile Thr
 165 170 175

His Phe Ile Asn Ala Ala Met Ala Glu Glu Lys Ser Ile Lys Ala Trp
 180 185 190

Asp Gly Gly Gly Tyr Ser Thr Leu Glu Lys Val Ser His Asn Tyr Phe
 195 200 205

Leu Phe Gly Arg Ala Val His Leu Phe Gln Asp Ser Phe Ser Pro Glu
 210 215 220

His Thr Val Arg Leu Pro Gln Asp Asn Tyr Glu Lys Val Arg Gln Val
 225 230 235 240

Lys Ala Tyr Leu Cys Ser Glu Gly Ala Glu Gln His Thr His Asn Ala
 245 250 255

Gln Asp Ala Ile Ser Phe Thr Ser Gly Asp Val Ile Trp Lys Lys Asn
 260 265 270

Thr Arg Leu Asp Ala Gly Trp Ser Thr Tyr Lys Pro Ser Asn Met Lys
 275 280 285

Pro Val Ala Leu Val Ala Met Glu Ala Ser Lys Asp Leu Trp Ala Ala
 290 295 300

Phe Ile Arg Thr Met Ala Ala Pro Arg Ser Glu Arg Arg Ala Ile Ala
 305 310 315 320

Gln Gln Glu Ala Gln Thr Leu Val Asn Asn Trp Leu Ser Phe Asp Glu
 325 330 335

Gln Glu Met Leu Ser Trp Tyr Asp Glu Glu Thr His Arg Asp His Thr
 340 345 350

Tyr Val Leu Glu Pro Gly Gln Asn Gly Pro Gly Ile Ser Met Phe Asp
 355 360 365

Cys Met Val Gly Leu Gly Val Thr Ser Gly Ser Gln Ala Ala Arg Val
 370 375 380

Ala Glu Leu Asp Gln Gln Arg Arg Gln Cys Leu Phe Asn Val Lys Ala
 385 390 395 400

Thr Thr Gly Tyr Ser Asp Leu Asn Asp Pro His Met Asp Ile Pro Tyr
 405 410 415

Asn Trp Gln Trp Thr Ser Thr Gln Trp Lys Val Pro Ser Ala Ser
 420 425 430

Trp Thr Ile Pro Gln Leu Pro Ala Asp Ala Gly Lys Lys Val Thr Ile
 435 440 445

Lys Asn Ala Ile Asn Gly Asn Pro Leu Val Ala Pro Ala Gly Val Lys
 450 455 460

His Asn Ser Asp Ile Tyr Ser Ala Pro Gly Glu Ala Ile Glu Phe Ile
 465 470 475 480

Phe Val Gly Asp Tyr Asn Asn Glu Ser Tyr Leu Arg Ser Lys Lys Asp
 485 490 495

Ala Asp Leu Phe Leu Ser Tyr Ser Ala Val Ser Gly Lys Gly Leu Leu
 500 505 510

Tyr Asn Thr Pro Asn Gln Ala Gly Tyr Arg Val Lys Pro Ala Gly Val
 515 520 525

Leu Trp Thr Ile Glu Asn Thr Tyr Trp Asn Asp Phe Leu Trp Phe Asn

530	535	540
Ser Ser Asn Asn Arg Ile Tyr Val Ser Gly Thr	Gly Asp Ala Asn Lys	
545	550	555
Leu His Ser Gln Trp Ile Ile Asp Gly Leu Lys		560
565	570	

<210> 23
<211> 1473
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 23

atgacatcc gctcgaccga ctacgcgtc ctcgcgcagg agagctacca cgacagccag	60
gtcgatgctg acgtcaagct cgatggcatc tcctacaagg tattcgccac cacggacgac	120
ccccctcaccgc gcttccaggg caccgcgttac cagcgccagg atacggcga ggtggtcattc	180
gcctaccgcgc gcacggaaatt cgacccgcga cccgtgcgcg atggcggcgt cgacgcaggc	240
atgggttgtc ttggcgtcaa cgcccagtca cctgcattccg aggtattcac ccgcgaagtgc	300
atcgaaaagg cgaaggacaga agccgagctc aacgatcgcg agccgaagat caccgtcacc	360
gggcattccc tcggcggcac cctccggaa atcaatgcgg cggaaatacgg cttccacggc	420
gaaaccttca atgcctacgg tgccgcgcg ctcaaggcgca tccccgaggg cggcgacacg	480
gtgatcgacc atgtccgcgc cggcgatctc gtcagcgcgc ccagccgcga ctacggcag	540
gtgcgtgtgt acgcagctca gcaggatatc gataccctgc aacatgccgg ctaccgcac	600
gacagtggca tcttcagct ggcgaaccccc atcaaggcca cggatttcga cgcccacgcg	660
atcgataact tcgtgccccaa cagcaagctg cttggccaat cgatcatcgcc tcctgagaac	720
gaagcccggtt acgaagccca caagggcatg atcgatcgct atcgcgatga cgtggccgat	780
atccggaaag gcatctccgc tccctggaa atccccagg ccgtcgccgc gctgaaggac	840
aagctcgaaac acgaaggcctt cgagctggcc ggcaaggcgca tcctcgccgt cgagcacgg	900
gtagccgagg tcgttacgca ggcgaaggaa gggttcgatc atctcaaggg aggcttgac	960
cacgtcaggg aagagatcag cgagggcatc cacggcgatgg aagagaaggc ttccagcgca	1020
tggcacacccc tcacccaccc gaaggaatgg ttcgagcacg acaaaccctca agtgaatctc	1080
gaccatcccc agcatccaga caacgccttgc ttcaagcgagg cgccaggcgcc ggtacacgccc	1140
ctcgatgcca cgcaaggccg cacgcctatc aggacgagcg accagatcgcc aggttctctg	1200
gtggtcgcgg cgcgacgcga tggctcgag cgggtggacc gccgcgtgtc cagcgatgac	1260
actagccggc tctacggcgat gcagggtgcg acggattcgcc ccttgaagca gttcaccgag	1320
gtgaacacga cagtggcgcc gcaaacgtca ctgcagcaaa gcagccaggc atggcagcag	1380
caagcagaga tcgcgcgaca gaaccaggca accagccagg ctcagcgcat ggaaccgcag	1440
gtgccccccgc aggacccggc acatggcatg taa	1473

<210> 24
<211> 490
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 24

Met Thr Ile Arg Ser Thr Asp Tyr Ala Leu Leu Ala Gln Glu Ser Tyr			
1	5	10	15
His Asp Ser Gln Val Asp Ala Asp Val Lys Leu Asp Gly Ile Ser Tyr			
20	25	30	
Lys Val Phe Ala Thr Thr Asp Asp Pro Leu Thr Gly Phe Gln Ala Thr			
35	40	45	
Ala Tyr Gln Arg Gln Asp Thr Gly Glu Val Val Ile Ala Tyr Arg Gly			

50	55	60
Thr Glu Phe Asp Arg Glu Pro Val Arg Asp Gly	Gly Val Asp Ala Gly	
65	70	75
Met Val Leu Leu Gly Val Asn Ala Gln Ser Pro Ala Ser	Glu Val Phe	80
85	90	95
Thr Arg Glu Val-Ile Glu Lys Ala Lys His Glu Ala Glu	Leu Asn Asp	
100	105	110
Arg Glu Pro Lys Ile Thr Val Thr Gly His Ser	Leu Gly Gly Thr	Leu
115	120	125
Ala Glu Ile Asn Ala Ala Lys Tyr Gly Leu His Gly	Glu Thr Phe Asn	
130	135	140
Ala Tyr Gly Ala Ala Ser Leu Lys Gly Ile Pro	Glu Gly Asp Thr	
145	150	155
Val Ile Asp His Val Arg Ala Gly Asp Leu Val Ser	Ala Ala Ser Pro	
165	170	175
His Tyr Gly Gln Val Arg Val Tyr Ala Ala Gln Gln	Asp Ile Asp Thr	
180	185	190
Leu Gln His Ala Gly Tyr Arg Asp Asp Ser	Gly Ile Phe Ser Leu Arg	
195	200	205
Asn Pro Ile Lys Ala Thr Asp Phe Asp Ala His	Ala Ile Asp Asn Phe	
210	215	220
Val Pro Asn Ser Lys Leu Leu Gly Gln Ser Ile	Ile Ala Pro Glu Asn	
225	230	235
Glu Ala Arg Tyr Glu Ala His Lys Gly Met Ile Asp	Arg Tyr Arg Asp	
245	250	255
Asp Val Ala Asp Ile Arg Lys Gly Ile Ser Ala Pro	Trp Glu Ile Pro	
260	265	270
Lys Ala Val Gly Glu Leu Lys Asp Lys Leu Glu His	Glu Ala Phe Glu	
275	280	285
Leu Ala Gly Lys Gly Ile Leu Ala Val Glu His	Gly Val Ala Glu Val	
290	295	300
Val His Glu Ala Lys Glu Gly Phe Asp His	Leu Lys Glu Gly Leu His	
305	310	315
His Val Arg Glu Glu Ile Ser Glu Gly Ile His	Ala Val Glu Glu Lys	
325	330	335
Ala Ser Ser Ala Trp His Thr Leu Thr His Pro	Lys Glu Trp Phe Glu	
340	345	350
His Asp Lys Pro Gln Val Asn Leu Asp His	Pro Gln His Pro Asp Asn	
355	360	365
Ala Leu Phe Lys Gln Ala Gln Gly Ala Val His	Ala Leu Asp Ala Thr	
370	375	380
Gln Gly Arg Thr Pro Asp Arg Thr Ser Asp	Gln Ile Ala Gly Ser Leu	
385	390	395
Val Val Ala Ala Arg Arg Asp Gly Leu Glu Arg	Val Asp Arg Ala Val	
405	410	415
Leu Ser Asp Asp Thr Ser Arg Leu Tyr Gly Val Gln	Gly Ala Thr Asp	
420	425	430
Ser Pro Leu Lys Gln Phe Thr Glu Val Asn Thr	Thr Val Ala Ala Gln	
435	440	445
Thr Ser Leu Gln Gln Ser Ser Gln Ala Trp Gln	Gln Gln Ala Glu Ile	
450	455	460
Ala Arg Gln Asn Gln Ala Thr Ser Gln Ala Gln	Arg Met Glu Pro Gln	
465	470	475
Val Pro Pro Gln Ala Pro Ala His Gly Met		480
485	490	

<210> 25

<211> 1098

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 25

atgtgcgcca	aagttaaagt	agtcaaaata	aagacaaaaca	cagggcagccc	aaacaaaatac	60
cacttcaaga	acctcgcttt	cgaaggcggc	ggcgtgaaag	gcattgccta	tgtgggagcc	120
cttaccaagc	tcgacgagga	aggcatcctt	caaaacatta	agcgcgtggc	cggcacctca	180
gcaggagcaa	tggtgccgt	cctcgctcga	ttgggcttca	ccgctaagga	gataagcgac	240
atcctgtggg	acatcaaatt	ccagaacttt	ttagacaact	catggggcgt	gatacgcaac	300
accaatcgtc	tgctgacgga	atacggctgg	tataagggcg	agttttccg	cgacccatg	360
gctgattaca	tcaaaaagaaa	gacagacgt	ggcgagatta	ctttcgggga	gttggaggcc	420
atgagaaaag	agggcaagcc	cttcttggaa	atccatctgg	ttggctccga	cctcacgaca	480
gggtattcca	gagtgttcaa	ctccaaaaac	accccaaattg	tgaaagtgcg	cgatgccgccc	540
cgcacatctcca	tgtcgatacc	gctgttttc	tccgctgtga	gaggcgtgca	aggcgacgac	600
cacctctatg	tggacgggtgg	gctttggac	aactacgcca	tcaagatttt	cgaccagtgc	660
aaactcgttt	cagacaaaaaa	caacaaaagg	aagaccgagt	attacaacag	gctcaaccag	720
caagtgaacg	cggaaagcaac	gaaaagcaag	acggaatctg	tagatgtatgt	ctacaacaag	780
gagacttgg	gcttccgctt	ggatgccaaa	gaggacatca	acctttccct	caaccacgat	840
gatgcccctc	aaaaagaaaat	caagagtttc	ttctcttaca	ccaaagcttt	gtttccacg	900
ctcatcgatt	tccagaacaa	tgtacacctg	cacagcgacg	actggcagcg	tacggcttac	960
atcgacacac	tcgggtgtca	ctccattgac	ttcggctctgt	caaacacacaac	gaaacaagct	1020
cttgtcgatt	cgggctacaa	ctacaccaca	gcctacactcg	actggtacaa	caacgacgag	1080
gataaagcca	acaagtaa					1098

<210> 26

<211> 365

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 26

Met	Cys	Ala	Lys	Val	Val	Lys	Val	Val	Ile	Lys	Thr	Asn	Thr	Gly	Ser		
1						5				10				15			
Pro							His	Phe	Lys	Asn	Leu	Val	Phe	Glu	Gly	Gly	Val
							20				25			30			
Lys	Gly	Ile	Ala	Tyr	Val	Gly	Ala	Leu	Thr	Lys	Leu	Asp	Glu	Glu	Gly		
							35			40			45				
Ile	Leu	Gln	Asn	Ile	Lys	Arg	Val	Ala	Gly	Thr	Ser	Ala	Gly	Ala	Met		
							50			55			60				
Val	Ala	Val	Leu	Val	Gly	Leu	Gly	Phe	Thr	Ala	Lys	Glu	Ile	Ser	Asp		
							65			70			75		80		
Ile	Leu	Trp	Asp	Ile	Lys	Phe	Gln	Asn	Phe	Leu	Asp	Asn	Ser	Trp	Gly		
							85			90			95				
Val	Ile	Arg	Asn	Thr	Asn	Arg	Leu	Leu	Thr	Glu	Tyr	Gly	Trp	Tyr	Lys		
							100			105			110				
Gly	Glu	Phe	Phe	Arg	Asp	Leu	Met	Ala	Asp	Tyr	Ile	Lys	Arg	Lys	Thr		
							115			120			125				
Asp	Asp	Gly	Glu	Ile	Thr	Phe	Gly	Glu	Leu	Glu	Ala	Met	Arg	Lys	Glu		
							130			135			140				
Gly	Lys	Pro	Phe	Leu	Glu	Ile	His	Leu	Val	Gly	Ser	Asp	Leu	Thr	Thr		
							145			150			155		160		

Gly Tyr Ser Arg Val Phe Asn Ser Lys Asn Thr Pro Asn Val Lys Val
 165 170 175
 Ala Asp Ala Ala Arg Ile Ser Met Ser Ile Pro Leu Phe Phe Ser Ala
 180 185 190
 Val Arg Gly Val Gln Gly Asp Asp His Leu Tyr Val Asp Gly Gly Leu
 195 200 205
 Leu Asp Asn Tyr Ala Ile Lys Ile Phe Asp Gln Ser Lys Leu Val Ser
 210 215 220
 Asp Lys Asn Asn Lys Arg Lys Thr Glu Tyr Tyr Asn Arg Leu Asn Gln
 225 230 235 240
 Gln Val Asn Ala Lys Ala Thr Lys Ser Lys Thr Glu Ser Val Glu Tyr
 245 250 255
 Val Tyr Asn Lys Glu Thr Leu Gly Phe Arg Leu Asp Ala Lys Glu Asp
 260 265 270
 Ile Asn Leu Phe Leu Asn His Asp Asp Ala Pro Gln Lys Glu Ile Lys
 275 280 285
 Ser Phe Phe Ser Tyr Thr Lys Ala Leu Val Ser Thr Leu Ile Asp Phe
 290 295 300
 Gln Asn Asn Val His Leu His Ser Asp Asp Trp Gln Arg Thr Val Tyr
 305 310 315 320
 Ile Asp Thr Leu Gly Val Ser Ser Ile Asp Phe Gly Leu Ser Asn Thr
 325 330 335
 Thr Lys Gln Ala Leu Val Asp Ser Gly Tyr Asn Tyr Thr Thr Ala Tyr
 340 345 350
 Leu Asp Trp Tyr Asn Asn Asp Glu Asp Lys Ala Asn Lys
 355 360 365

<210> 27

<211> 1287

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 27

gtgtcgatttacccg	aaagccctcc	ggcgggtttg	gagcgatagt	tcctcaagcg	60
aaaatttgaga	accttgtttt	cgaggcgccc	ggaccaaagg	gcctggctta	120
gtcgagggttc	tcggcgaaag	gggactgctg	gaaggatcg	caaatgtcg	180
gcaggcgcca	tgaccgctct	agccgtcggt	ctggactga	gccccaggga	240
gtcgcttttta	accagaacat	tgccgacctc	accgatatcg	agaagaccgt	300
tccgggatttta	caggcatgtt	caagagcgtg	ttcaagaagg	gttggcaggc	360
gtAACCGGCA	cctctgacga	gcccggcgc	gggcttatac	gcggcgagaa	420
tggatcagag	acctgattgc	acagcgagtc	gaggcggggc	gctccgaggt	480
gccgacgccc	atggacggaa	cttctatgag	aaagccccc	caaagaagg	540
tttggcgagc	ttgatecggt	ggcgc当地	gcccggggcc	tgccgcttc	600
tccacccgaa	ccaacttac	gtcgaagaag	ctcgaagtgt	tcagtctgca	660
gacatgccg	tcgacgtcgc	ggtacgcata	tccgcatacg	cgagaccccg	720
gtgaaatgg	acggctccg	atacatagat	ggcggctgcc	tgtcaactt	780
atattcgacg	tcgateccct	tcgtggcgac	gcatgtcga	cccaatgccc	840
ggccagaacc	tcgcgacgct	cggttcaag	gtcgacagcg	cgccatctt	900
ctctggcgta	gccccggag	cacgacgcac	aggaggagat	ggcgcgtcg	960
aaagcttctg	cagaacactg	ggtcgtcgcc	atcgacgtcg	aaggcgcac	1020
aacgtggccg	ttcacggcaa	gtatgtctag	cgaacatccc	ccgcgcgtcg	1080
agcacgttca	agttcgatct	ttcggacgct	gacaaggagc	gtcaaggccg	1140
aaggccacgc	ggaatggct	ggcgtgtac	ccggaataga	ggcgcgtcg	1200
tctgatccga	acgaatttgcg	tcggcagttt	cattcgcaga	cattcgcaga	1260

tcgtttcgag ccttgatgc gccttag

1287

<210> 28

<211> 428

<212> PRT

<213> Unknown -

<220>

<223> Obtained from an environmental sample.

<400> 28

Met Ser Ile Thr Val Tyr Arg Lys Pro Ser Gly Gly Phe Gly Ala Ile
 1 5 10 15
 Val Pro Gln Ala Lys Ile Glu Asn Leu Val Phe Glu Gly Gly Pro
 20 25 30
 Lys Gly Leu Val Tyr Val Gly Ala Val Glu Val Leu Gly Glu Arg Gly
 35 40 45
 Leu Leu Glu Gly Ile Ala Asn Val Gly Gly Ala Ser Ala Gly Ala Met
 50 55 60
 Thr Ala Leu Ala Val Gly Leu Gly Leu Ser Pro Arg Glu Ile Arg Ala
 65 70 75 80
 Val Val Phe Asn Gln Asn Ile Ala Asp Leu Thr Asp Ile Glu Lys Thr
 85 90 95
 Val Glu Pro Ser Ser Gly Ile Thr Gly Met Phe Lys Ser Val Phe Lys
 100 105 110
 Lys Gly Trp Gin Ala Val Arg Asn Val Thr Gly Thr Ser Asp Glu Arg
 115 120 125
 Gly Arg Gly Leu Tyr Arg Gly Glu Lys Leu Arg Ala Trp Ile Arg Asp
 130 135 140
 Leu Ile Ala Gln Arg Val Glu Ala Gly Arg Ser Glu Val Leu Ser Arg
 145 150 155 160
 Ala Asp Ala Asp Gly Arg Asn Phe Tyr Glu Lys Ala Ala Ala Lys Lys
 165 170 175
 Gly Ala Leu Thr Phe Ala Glu Leu Asp Arg Val Ala Gln Met Ala Pro
 180 185 190
 Gly Leu Arg Leu Arg Arg Leu Ala Phe Thr Gly Thr Asn Phe Thr Ser
 195 200 205
 Lys Lys Leu Glu Val Phe Ser Leu His Glu Thr Pro Asp Met Pro Ile
 210 215 220
 Asp Val Ala Val Arg Ile Ser Ala Ser Leu Pro Trp Phe Phe Lys Ser
 225 230 235 240
 Val Lys Trp Asn Gly Ser Glu Tyr Ile Asp Gly Gly Cys Leu Ser Asn
 245 250 255
 Phe Pro Met Pro Ile Phe Asp Val Asp Pro Tyr Arg Gly Asp Ala Ser
 260 265 270
 Ser Lys Ile Arg Leu Gly Ile Phe Gly Gln Asn Leu Ala Thr Leu Gly
 275 280 285
 Phe Lys Val Asp Ser Glu Glu Glu Ile Arg Asp Ile Leu Trp Arg Ser
 290 295 300
 Pro Glu Ser Thr Ser Asp Gly Phe Phe Gln Gly Ile Leu Ser Ser Val
 305 310 315 320
 Lys Ala Ser Ala Glu His Trp Val Val Gly Ile Asp Val Glu Gly Ala
 325 330 335
 Thr Arg Ala Ser Asn Val Ala Val His Gly Lys Tyr Ala Gln Arg Thr
 340 345 350
 Ile Gln Ile Pro Asp Leu Gly Tyr Ser Thr Phe Lys Phe Asp Leu Ser
 355 360 365

Asp Ala Asp Lys Glu Arg Met Ala Glu Ala Gly Ala Lys Ala Thr Arg
 370 375 380
 Glu Trp Leu Ala Leu Tyr Phe Asp Asp Ala Gly Ile Glu Val Glu Phe
 385 390 395 400
 Ser Asp Pro Asn Glu Leu Arg Gly Gln Leu Ser Asp Ala Ala Phe Ala
 -405 410 415
 Asp Leu Glu Asp Ser Phe Arg Ala Leu Ile Ala Ala
 420 425

<210> 29

<211> 753

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 29

atggaaaacg	gtgcagcagt	tggttcgaat	gataatggta	gagaagaaaag	tgtttacgta	60
ctttctgtga	tcgcctgtaa	tgtttattat	ttacaaaagt	gtgaagggtgg	ggcatcgct	120
gatagcgtga	ttagagaaaat	caatacgccaa	actcaacctt	taggatatga	gatttttagca	180
gattcttattc	gtgatggtca	tattggctct	tttgcctgtta	agatggctgt	cttttagaaaat	240
aatggaaaacg	gcaatttgtt	tttagcaatc	aaaggactg	atatgaataa	tatcaatgac	300
ttgggtgaatg	acctaaccat	gataatttagga	ggtattggtt	ctgttgctgc	aatccaaacca	360
acgattaaca	tggcacaaga	actcatcgac	caatatggag	tgaatttgat	tacaggtcac	420
tcccttggag	gctacatgac	tgagatcatc	gccaccaatc	gtggacttcc	aggtattgca	480
ttttgcgcac	caggttcaaa	tggtcccatt	gtaaaattag	gtggacaaga	gacacctggc	540
tttcacaatg	tgaactttga	acatgatcca	gcaggttaacg	ttagtacggg	gtttataact	600
catgtccaat	ggagtattta	tgttaggatgt	gatggatga	ctcatggtat	tgaaaatatg	660
gtgaatttatt	ttaaagataa	aagagattta	accaatcgca	atattcaagg	aagaagtgaa	720
agtctataata	cgggttattta	ttacccaaaa	taa			753

<210> 30

<211> 250

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 30

Met Gly Asn Gly	Ala Ala Val Gly	Ser Asn Asp Asn Gly	Arg Glu Glu		
1	5	10	15		
Ser Val Tyr Val	Leu Ser Val Ile	Ala Cys Asn Val	Tyr Tyr Leu Gln		
20	25	30			
Lys Cys Glu Gly	Gly Ala Ser Arg	Asp Ser Val Ile	Arg Glu Ile Asn		
35	40	45			
Ser Gln Thr Gln	Pro Leu Gly	Tyr Glu Ile Val	Ala Asp Ser Ile Arg		
50	55	60			
Asp Gly His Ile	Gly Ser Phe	Ala Cys Lys	Met Ala Val Phe Arg Asn		
65	70	75	80		
Asn Gly Asn Gly	Asn Cys Val	Leu Ala Ile	Lys Gly Thr Asp Met Asn		
85	90	95			
Asn Ile Asn Asp	Leu Val Asn Asp	Leu Thr Met Ile	Leu Gly Gly Ile		
100	105	110			
Gly Ser Val	Ala Ala Ile Gln	Pro Thr Ile Asn	Met Ala Gln Glu Leu		
115	120	125			

Ile Asp Gln Tyr Gly Val Asn Leu Ile Thr Gly His Ser Leu Gly Gly
 130 135 140
 Tyr Met Thr Glu Ile Ile Ala Thr Asn Arg Gly Leu Pro Gly Ile Ala
 145 150 155 160
 Phe Cys Ala Pro Gly Ser Asn Gly Pro Ile Val Lys Leu Gly Gly Gln
 -165 170 175
 Glu Thr Pro Gly Phe His Asn Val Asn Phe Glu His Asp Pro Ala Gly
 180 185 190
 Asn Val Met Thr Gly Val Tyr Thr His Val Gln Trp Ser Ile Tyr Val
 195 200 205
 Gly Cys Asp Gly Met Thr His Gly Ile Glu Asn Met Val Asn Tyr Phe
 210 215 220
 Lys Asp Lys Arg Asp Leu Thr Asn Arg Asn Ile Gln Gly Arg Ser Glu
 225 230 235 240
 Ser His Asn Thr Gly Tyr Tyr Tyr Pro Lys
 245 250

<210> 31

<211> 1422

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 31

atgaaaaaga aattatgtac atgggctctc	gtaacagcga tatcttctgg agttgttgcg	60
attccaaaccg tagcatctgc ttgcggaatg	ggtgaagtaa taaaacagga ggtcaagag	120
cacaaacatgt tgaagagatg gtctcgaggag	catccgcacc atgctaataa aagcacgcac	180
ttatggatttgc ttcgaaatgc gattcaaatt	atgagtgcata atcaagataa gacggttcaa	240
gaaaatgaat tacaattctt aaaaataacctt	aatataagg agttatttga aagaggcctt	300
tatgatgccg attatcttgc tgagtttac	gatggaggtt caggtacaat cggatttgat	360
gggcttaatta aaggaggctg gaaatctcat	ttctatgatc ctgatacgaa aaagaactat	420
aaaggagaag aagaaccaac agcccttgc	caaggggata aatattttaa attacggaga	480
gattatttta agaaagaaga ttggaaacaa	gctttctatt atttaggtt tgcgacgcatt	540
tacttcacag atgctactca gccaatgcatt	gctgctaatt ttacagctgt cgacatgagt	600
gcaataaaagt ttcatagcgc ttttggaaat	tatgtaacga cagttcagac accgtttgaa	660
gtgaaggatg ataagggaac atataatttgc	gtcaatttgc atgatccgaa gcagtggata	720
catgaaacacg cgaaactcgc aaaacgcgaa	attatgaata ttactagtga taatattaaa	780
tctcaatata ataaaggaaa caaagatctt	tggcaacaag aagttatgcc agctgtccag	840
aggagtttag agaaagcgcg aagaaaacacg	gcgggattta ttcatattatg gtttaaaaaca	900
tatgttggca aaactgcgcg tgaagatatt	gaaactacac agtaaaaga ttctaattgga	960
gaagcaatac aagaacaaaaaaaataactac	gttgtgccta gtgagttttt aaatagaggt	1020
ttgacctttg aggttatatgc ttcaatgcac	tacgcaactat tatctaatac cgtagatgat	1080
aataaagttc atggtaacc tggtagttt	gtttttgata aagagaataa cggaaattgtt	1140
catcggggag aaagtgtact gctgaaaatg	acgcaatcta actatgatga ttatgtat	1200
cttaattact ctaatatgac aaattggtaa	catcttgcga aacgaaaaac aaatactgca	1260
cagttaaag tgtatccaaa tccggataac	tcatctgaaat atttcctata tacagatgga	1320
tacccggtaa attatcaaga aaatggtaat	ggaaagagct ggattgagtt aggaaagaaa	1380
acggataaaac cgaaagcgtg gaaatttcaa	caggcagaat aa	1422

<210> 32

<211> 473

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(20)

<400> 32 -
Met Lys Lys Leu Cys Thr Trp Ala Leu Val Thr Ala Ile Ser Ser
1 5 10 15
Gly Val Val Ala Ile Pro Thr Val Ala Ser Ala Cys Gly Met Gly Glu
20 25 30
Val Met Lys Gln Glu Asp Gln Glu His Lys Arg Val Lys Arg Trp Ser
35 40 45
Ala Glu His Pro His His Ala Asn Glu Ser Thr His Leu Trp Ile Ala
50 55 60
Arg Asn Ala Ile Gln Ile Met Ser Arg Asn Gln Asp Lys Thr Val Gln
65 70 75 80
Glu Asn Glu Leu Gln Phe Leu Lys Ile Pro Glu Tyr Lys Glu Leu Phe
85 90 95
Glu Arg Gly Leu Tyr Asp Ala Asp Tyr Leu Asp Glu Phe Asn Asp Gly
100 105 110
Gly Thr Gly Thr Ile Gly Ile Asp Gly Leu Ile Lys Gly Gly Trp Lys
115 120 125
Ser His Phe Tyr Asp Pro Asp Thr Lys Lys Asn Tyr Lys Gly Glu Glu
130 135 140
Glu Pro Thr Ala Leu Ser Gln Gly Asp Lys Tyr Phe Lys Leu Ala Gly
145 150 155 160
Asp Tyr Phe Lys Lys Glu Asp Trp Lys Gln Ala Phe Tyr Tyr Leu Gly
165 170 175
Val Ala Thr His Tyr Phe Thr Asp Ala Thr Gln Pro Met His Ala Ala
180 185 190
Asn Phe Thr Ala Val Asp Met Ser Ala Ile Lys Phe His Ser Ala Phe
195 200 205
Glu Asn Tyr Val Thr Thr Val Gln Thr Pro Phe Glu Val Lys Asp Asp
210 215 220
Lys Gly Thr Tyr Asn Leu Val Asn Ser Asp Asp Pro Lys Gln Trp Ile
225 230 235 240
His Glu Thr Ala Lys Leu Ala Lys Ala Glu Ile Met Asn Ile Thr Ser
245 250 255
Asp Asn Ile Lys Ser Gln Tyr Asn Lys Gly Asn Lys Asp Leu Trp Gln
260 265 270
Gln Glu Val Met Pro Ala Val Gln Arg Ser Leu Glu Lys Ala Gln Arg
275 280 285
Asn Thr Ala Gly Phe Ile His Leu Trp Phe Lys Thr Tyr Val Gly Lys
290 295 300
Thr Ala Ala Glu Asp Ile Glu Thr Thr Gln Val Lys Asp Ser Asn Gly
305 310 315 320
Glu Ala Ile Gln Glu Gln Lys Lys Tyr Tyr Val Val Pro Ser Glu Phe
325 330 335
Leu Asn Arg Gly Leu Thr Phe Glu Val Tyr Ala Ser Asn Asp Tyr Ala
340 345 350
Leu Leu Ser Asn His Val Asp Asp Asn Lys Val His Gly Thr Pro Val
355 360 365
Gln Phe Val Phe Asp Lys Glu Asn Asn Gly Ile Val His Arg Gly Glu
370 375 380
Ser Val Leu Leu Lys Met Thr Gln Ser Asn Tyr Asp Asp Tyr Val Phe
385 390 395 400
Leu Asn Tyr Ser Asn Met Thr Asn Trp Leu His Leu Ala Lys Arg Lys

405	410	415
Thr Asn Thr Ala Gln Phe Lys Val Tyr Pro Asn Pro Asp Asn		Ser Ser
420	425	430
Glu Tyr Phe Leu Tyr Thr Asp Gly Tyr Pro Val Asn Tyr Gln Glu Asn		
435	440	445
Gly Asn Gly Lys-Ser Trp Ile Glu Leu Gly Lys Lys Thr Asp Lys Pro		
450	455	460
Lys Ala Trp Lys Phe Gln Gln Ala Glu		
465	470	

<210> 33

<211> 792

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 33

atgagagcac tcgtgctggc	aggcggtgga	gccaaaggct	cgtttcaagt	gggcgtgctg	60
cagcgggtca	cccccgcaga	cttcggtctc	gtgggtggat	gctccggtcgg	120
gcccgggggt	ttgcccacct	ggtagccat	ggcatcaaag	acctctggca	180
agtcgagatg	acatcctgtc	ccgtgtctgg	tggccgtttg	gctcagacgg	240
cagaaggctc	ttgaaaagct	cgtctccaaa	gcatgcacgg	gtcctgctcg	300
cacgtggcga	cggtctgcct	tgaacgcggc	cttgtccact	agggatctc	360
gactttgaga	agaaaagtgc	ggcatcggt	gcatcccgag	cggtggtgaa	420
atccatggcg	accactacgt	cgacgggtgt	gtcagagaga	tctgtccgct	480
atcgacctgg	gcccacggg	gatcacagtc	atcatgtgcg	ctccggaata	540
tggtcgcgta	gttcctcgct	gttcccgttt	gtgaacgtga	tgtatccggtc	600
ctgaccgatg	agatcctgg	caacgacatc	gccgagtgcg	tggcaaagaa	660
gttaaacgtc	acgtaaagct	caccatctac	cgccgcaga	aagagctcat	720
gactttgacc	ccaaagccat	cgccgcagg	atcaaggcag	gcaccgaagc	780
ttctggagt aa					792

<210> 34

<211> 263

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 34

Met Arg Ala Leu Val Leu Ala Gly Gly Gly	Ala Lys Gly Ser Phe Gln		
1	5	10	15
Val Gly Val Leu Gln Arg Phe Thr Pro Ala Asp Phe Gly	Leu Val Val		
20	25	30	
Gly Cys Ser Val Gly Ala Leu Asn Ala Ala Gly Phe Ala His	Leu Gly		
35	40	45	
Ser His Gly Ile Lys Asp Leu Trp Gln Gly Ile Arg Ser Arg	Asp Asp		
50	55	60	
Ile Leu Ser Arg Val Trp Trp Pro Phe Gly Ser Asp Gly Ile Phe	Ser		
65	70	75	80
Gln Lys Pro Leu Glu Lys Leu Val Ser Lys Ala Cys Thr Gly	Pro Ala		
85	90	95	
Arg Val Pro Val His Val Ala Thr Val Cys Leu Glu Arg Gly	Leu Val		
100	105	110	

His Tyr Gly Ile Ser Gly Asp Ser Asp Phe Glu Lys Lys Val Leu Ala
 115 120 125
 Ser Ala Ala Ile Pro Gly Val Val Lys Pro Val Lys Ile His Gly Asp
 130 135 140
 His Tyr Val Asp Gly Gly Val Arg Glu Ile Cys Pro Leu Arg Arg Ala
 145 - 150 155 160
 Ile Asp Leu Gly Ala Thr Glu Ile Thr Val Ile Met Cys Ala Pro Glu
 165 170 175
 Tyr Ile Pro Thr Trp Ser Arg Ser Ser Leu Phe Pro Phe Val Asn
 180 185 190
 Val Met Ile Arg Ser Leu Asp Ile Leu Thr Asp Glu Ile Leu Val Asn
 195 200 205
 Asp Ile Ala Glu Cys Val Ala Lys Asn Lys Met Pro Gly Lys Arg His
 210 215 220
 Val Lys Leu Thr Ile Tyr Arg Pro Lys Lys Glu Leu Met Gly Thr Leu
 225 230 235 240
 Asp Phe Asp Pro Lys Ala Ile Ala Ala Gly Ile Lys Ala Gly Thr Glu
 245 250 255
 Ala Gln Pro Arg Phe Trp Glu
 260

<210> 35

<211> 1389

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 35

atgcccggc	cgccccccgc	atgcccgtgc	gattgcgcct	gcgagcgcga	ccagcacctt	60
ttttgcaagg	gacccaagcg	tatccctcgcg	ctcgacggcg	gccccgtgcg	cggcgccgtc	120
agcgtcgcat	tcctcgaacg	gatcgaggcg	gtgctcgagg	cccggtcg	acgcaaggtg	180
ctgctcgcc	actggttcga	cctgatcgcc	ggcacccgt	cgccgc	catcgccg	240
gcgctggcga	tgggattcgc	ggccgaggac	gtccaaagat	tctatcacga	gctcgccg	300
cgggttgtca	ggcatccgt	cctgcgcac	ggtctctgc	gcccggtccg	cgcgaaattc	360
gacgcccggcc	tgctgcgca	ggagatccac	cgcacatcg	gcgcacgcac	gctcgccgac	420
aaagcgctga	tgaccgggtt	cgcgtcg	gccaagcgg	tggacaccgg	cagcacctgg	480
atcctcgcca	acaacaagcg	cagcaaatac	tggaaaggc	gggacggcg	cgtcgcaac	540
aaggattatc	tcctcggcag	cctcattcgc	gcgcacacgg	cggccgcgt	gtatttcgac	600
cccgaggagg	tcgtgatcgc	ggaggcccgc	aaggacatcg	agggcatcag	gggcctgttc	660
gtcgacggcg	cggtcacg	gcacaacaat	ccttcgctcg	cgatgctgt	gctggcgctg	720
ctcgacgcct	accggctgcg	ctggaaaacg	ggaccggaca	agtcacgg	cgtctcgatc	780
ggcactggaa	cgcacgc	ccgcgtcg	ccgcacacgc	tcggcatgg	caagaacgcg	840
aagatcg	tgcgccat	gagctcg	atgaacgc	tgcacgc	cgcgtc	900
cagatgc	acctcggt	gacgc	ccgtggcg	tcaacgc	gctcgccg	960
atgcggacc	agcggccgc	gcaaggca	ctttccgt	tcctccgt	cgacgtccgg	1020
ctggagctcg	attggatcaa	cgaggac	gagcgcggc	gcaagatcaa	gaacaaattc	1080
aagcg	tgaccgagac	cgacatgatc	ccctcg	gcctcgac	tccgacgacc	1140
atccccggacc	tctacatgt	tgcccagg	gccccgg	agcagg	ggcgagc	1200
tggctcgccg	acgtgcgg	gtggagcg	ggcgcgc	cgtgtgc	gcccggc	1260
ctgcccggc	cgccgggg	ccgc	gattcggc	gcttccgg	cgagaagg	1320
gtcgccg	ggtc	ttt	tgcgccg	aacatcac	gcctcatgt	1380
ccgggttga						1389

<210> 36

<211> 462

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 36
Met Pro Glu Pro Pro Ala Ala Cys Arg Cys Asp Cys Ala Cys Glu Arg
1 5 10 15
Asp Gln His Leu Phe Cys Lys Gly Pro Lys Arg Ile Leu Ala Leu Asp
20 25 30
Gly Gly Gly Val Arg Gly Ala Val Ser Val Ala Phe Leu Glu Arg Ile
35 40 45
Glu Ala Val Leu Glu Ala Arg Leu Gly Arg Lys Val Leu Leu Gly His
50 55 60
Trp Phe Asp Leu Ile Gly Gly Thr Ser Thr Gly Ala Ile Ile Gly Gly
65 70 75 80
Ala Leu Ala Met Gly Phe Ala Ala Glu Asp Val Gln Arg Phe Tyr His
85 90 95
Glu Leu Ala Pro Arg Val Phe Arg His Pro Leu Leu Arg Ile Gly Leu
100 105 110
Leu Arg Pro Phe Arg Ala Lys Phe Asp Ala Arg Leu Leu Arg Glu Glu
115 120 125
Ile His Arg Ile Ile Gly Asp Ser Thr Leu Gly Asp Lys Ala Leu Met
130 135 140
Thr Gly Phe Ala Leu Val Ala Lys Arg Met Asp Thr Gly Ser Thr Trp
145 150 155 160
Ile Leu Ala Asn Asn Lys Arg Ser Lys Tyr Trp Glu Gly Arg Asp Gly
165 170 175
Val Val Gly Asn Lys Asp Tyr Leu Leu Gly Ser Leu Ile Arg Ala Ser
180 185 190
Thr Ala Ala Pro Leu Tyr Phe Asp Pro Glu Glu Val Val Ile Ala Glu
195 200 205
Ala Arg Lys Asp Ile Glu Gly Ile Arg Gly Leu Phe Val Asp Gly Gly
210 215 220
Val Thr Pro His Asn Asn Pro Ser Leu Ala Met Leu Leu Leu Ala Leu
225 230 235 240
Leu Asp Ala Tyr Arg Leu Arg Trp Glu Thr Gly Pro Asp Lys Leu Thr
245 250 255
Val Val Ser Ile Gly Thr Gly Thr His Arg Asp Arg Val Val Pro Asp
260 265 270
Thr Leu Gly Met Gly Lys Asn Ala Lys Ile Ala Leu Arg Ala Met Ser
275 280 285
Ser Leu Met Asn Asp Val His Glu Leu Ala Leu Thr Gln Met Gln Tyr
290 295 300
Leu Gly Glu Thr Leu Thr Pro Trp Arg Ile Asn Asp Glu Leu Gly Asp
305 310 315 320
Met Arg Thr Glu Arg Pro Pro Gln Gly Lys Leu Phe Arg Phe Leu Arg
325 330 335
Tyr Asp Val Arg Leu Glu Leu Asp Trp Ile Asn Glu Asp Glu Glu Arg
340 345 350
Arg Arg Lys Ile Lys Asn Lys Phe Lys Arg Glu Leu Thr Glu Thr Asp
355 360 365
Met Ile Arg Leu Arg Ser Leu Asp Asp Pro Thr Thr Ile Pro Asp Leu
370 375 380
Tyr Met Leu Ala Gln Val Ala Ala Glu Glu Gln Val Lys Ala Glu His
385 390 395 400

Trp	Leu	Gly	Asp	Val	Pro	Glu	Trp	Ser	Glu	Gly	Ala	Arg	Pro	Cys	Ala
					405				410					415	
Pro	Arg	Arg	His	Leu	Pro	Pro	Thr	Pro	Pro	Gly	Arg	Ser	Glu	Asp	Ser
					420				425					430	
Ala	Arg	Phe	Arg	Ala	Glu	Lys	Ala	Val	Gly	Glu	Trp	Leu	Ser	Phe	Ala
						435			440				445		
Arg	Ala	Asn	Ile	Thr	Arg	Leu	Met	Ser	Arg	Lys	Pro	Pro	Gly	.	
						450		455			460				

<210> 37
<211> 1329
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<210> 38
<211> 443
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<221> SIGNAL
<222> (1)...(23)

<400> 38
Met Arg Asn Phe Ser Lys Gly Leu Thr Ser Ile Leu Leu Ser Ile Ala
1 5 10 15
Thr Ser Thr Ser Ala Met Ala Phe Thr Gln Ile Gly Ala Gly Gly Ala

	20	25	30
Ile Pro Met Gly His Glu Trp Leu Thr Arg Arg Ser Ala Leu Glu Leu			
35	40	45	
Leu Asn Ala Asp Asn Leu Val Gly Asn Asp Pro Ala Asp Pro Arg Leu			
50	55	60	
Gly Trp Ser Glu-Gly Leu Ala Asn Asn Leu Asp Leu Ser Asn Ala Gln			
65	70	75	80
Asn Glu Val Gln Arg Ile Lys Ser Ile Thr Lys Ser His Ala Leu Tyr			
85	90	95	
Glu Pro Arg Tyr Asp Asp Val Phe Ala Ala Ile Val Gly Glu Arg Trp			
100	105	110	
Val Asp Thr Ala Gly Phe Asn Val Ala Lys Ala Thr Val Gly Lys Ile			
115	120	125	
Asp Cys Phe Ser Ala Val Ala Gln Glu Pro Ala Asp Val Gln Gln Asp			
130	135	140	
His Phe Met Arg Arg Tyr Asp Asp Val Gly Gly Gln Gly Val Asn			
145	150	155	160
Ala Ala Arg Arg Ala Gln Gln Arg Phe Ile Asn His Phe Val Asn Ala			
165	170	175	
Ala Met Ala Glu Glu Lys Ser Ile Lys Ala Trp Asp Gly Gly Tyr			
180	185	190	
Ser Ser Leu Glu Lys Val Ser His Asn Tyr Phe Leu Phe Gly Arg Ala			
195	200	205	
Val His Leu Phe Gln Asp Ser Phe Ser Pro Glu His Thr Val Arg Leu			
210	215	220	
Pro Glu Asp Asn Tyr Val Lys Val Arg Gln Val Lys Ala Tyr Leu Cys			
225	230	235	240
Ser Glu Gly Ala Glu Gln His Thr His Asn Thr Gln Asp Ala Ile Asn			
245	250	255	
Phe Thr Ser Gly Asp Val Ile Trp Lys Gln Asn Thr Arg Leu Asp Ala			
260	265	270	
Gly Trp Ser Thr Tyr Lys Ala Ser Asn Met Lys Pro Val Ala Leu Val			
275	280	285	
Ala Leu Glu Ala Ser Lys Asp Leu Trp Ala Ala Phe Ile Arg Thr Met			
290	295	300	
Ala Val Ser Arg Glu Glu Arg Arg Ala Val Ala Glu Gln Glu Ala Gln			
305	310	315	320
Ala Leu Val Asn His Trp Leu Ser Phe Asp Glu Gln Glu Met Leu Asn			
325	330	335	
Trp Tyr Glu Glu Glu His Arg Asp His Thr Tyr Val Lys Glu Pro			
340	345	350	
Gly Gln Ser Gly Pro Gly Ser Ser Leu Phe Asp Cys Met Val Gly Leu			
355	360	365	
Gly Val Ala Ser Gly Ser Gln Ala Gln Arg Val Ala Glu Leu Asp Gln			
370	375	380	
Gln Arg Arg Gln Cys Leu Phe Asn Val Lys Ala Ala Thr Gly Tyr Gly			
385	390	395	400
Asp Leu Asn Asp Pro His Met Asp Ile Pro Tyr Asn Trp Gln Trp Val			
405	410	415	
Ser Ser Thr Gln Trp Lys Ile Pro Ala Ala Asp Trp Lys Ile Pro Gln			
420	425	430	
Leu Pro Ala Asp Ser Gly Lys Ser Val Val Ile			
435	440		

<210> 39
<211> 1335
<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 39

atggccaacc	ccatcgcat	catccacggc	tggagcgacg	acttcggctc	gttccgcaag	60
ctgcgcgact	tcctctccac	caaccccgcc	gttccggcga	agatcctcaa	gctcggcgac	120
tggatctcg	tcgacgacga	cgtcggtac	gccgacatcg	cgatggcgct	ggaacgcgcg	180
tggaaggcgg	agaaaactgcc	gaccggccg	cgttcggtcg	acgtcgctgt	gcacagcacc	240
ggcgcgttgg	tggtgccgca	atggatgacg	cgctaccacg	cgccccaaac	cgtgccgatc	300
cagcgcttcc	tcgacacctggc	gccggccaac	ttcggctcgc	acctcgcgca	caagggccgc	360
tcgttcatcg	gccgcgcgg	gaaggctgg	aagaccggct	tcgaaaccgg	cacccgcattc	420
ctgcgcggc	tggaaactcg	ctcgccctac	tcgcgcgcgc	tggccgagcg	cgacactgttc	480
gtggcccg	cgaagcgctg	gtacggcgcc	ggccgcattc	tcgcccaccgt	gctggtcggc	540
aacagcggt	actccggcat	ccaggccatc	gccaacgagg	acggctccga	cggcaccgtg	600
cgcattcgca	ccgccaacct	gcaggcggcg	cttgcgaagg	tggtgttccc	gcccggcccg	660
gtcgcccg	tggtgcatgtt	ccgcaacatc	gcgggcggcca	ccgcgttcgc	catcgatcgac	720
ggcgacaacc	attccgacat	caccatgaag	gacaaggcgt	cgaagaccgg	catccgcgag	780
gaactgatcc	tcggcgcgct	gaaggtgccg	gacgcccact	tcccccggaa	cggcggccgc	840
gcgttcccg	ggcaggcgaa	gctcgacgcg	aaggccggtg	cggccaaagg	gtcttcgccc	900
gggcgcaga	acaccgtgg	gcacccctacc	gacagcttcg	gcgacgacgt	cgtcgatttc	960
ttcttcgagt	tctggcgca	cgaacgcgc	gacaagggtgt	tcgagcagcg	cttctacaag	1020
gacgtcatcg	acgacgtgca	cgtgtacgac	ggcaacggcg	cgtggcgctc	gctcaacctc	1080
gacctcgaca	agttcgaggc	gctgcgcaag	gaccgcgaag	tcggcttcga	gaaactgctg	1140
gtcagcgtgt	tcgcctcgcc	cgcgaagaag	ggcgacgcca	aggcggctta	cagcaccgc	1200
accggccgcg	acatcgccgc	ctggcacg	gaaggccgtg	acttcgc	ggccttcacg	1260
ccgcaccgc	ccctgttcgt	cgacatcgag	atcccacgca	tcgtcgacga	cgcgggtt	1320
cggttccggg	aata	g				1335

<210> 40

<211> 444

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 40

Met	Ala	Asn	Pro	Ile	Val	Ile	Ile	His	Gly	Trp	Ser	Asp	Asp	Phe	Gly
1				5			10				15				
Ser	Phe	Arg	Lys	Leu	Arg	Asp	Phe	Leu	Ser	Thr	Asn	Leu	Gly	Val	Pro
				20			25				30				
Ala	Lys	Ile	Leu	Lys	Leu	Gly	Asp	Trp	Ile	Ser	Leu	Asp	Asp	Asp	Val
				35			40			45					
Gly	Tyr	Ala	Asp	Ile	Ala	Met	Ala	Leu	Glu	Arg	Ala	Trp	Lys	Alá	Glu
				50			55			60					
Lys	Leu	Pro	Thr	Ala	Pro	Arg	Ser	Val	Asp	Val	Val	Val	His	Ser	Thr
				65			70			75			80		
Gly	Ala	Leu	Val	Val	Arg	Glu	Trp	Met	Thr	Arg	Tyr	His	Ala	Pro	Glu
				85			90			95					
Thr	Val	Pro	Ile	Gln	Arg	Phe	Leu	His	Leu	Ala	Pro	Ala	Asn	Phe	Gly
				100			105			110					
Ser	His	Leu	Ala	His	Lys	Gly	Arg	Ser	Phe	Ile	Gly	Arg	Ala	Val	Lys
				115			120			125					
Gly	Trp	Lys	Thr	Gly	Phe	Glu	Thr	Gly	Thr	Arg	Ile	Leu	Arg	Gly	Leu
				130			135			140					

Glu Leu Ala Ser Pro Tyr Ser Arg Ala Leu Ala Glu Arg Asp Leu Phe
 145 150 155 160
 Val Ala Pro Ser Lys Arg Trp Tyr Gly Ala Gly Arg Ile Leu Ala Thr
 165 170 175
 Val Leu Val Gly Asn Ser Gly Tyr Ser Gly Ile Gln Ala Ile Ala Asn
 180_ 185 190
 Glu Asp Gly Ser Asp Gly Thr Val Arg Ile Gly Thr Ala Asn Leu Gln
 195 200 205
 Ala Ala Leu Ala Lys Val Val Phe Pro Pro Gly Pro Val Ala Pro Val
 210 215 220
 Val Gln Phe Arg Asn Ile Ala Gly Ala Thr Ala Phe Ala Ile Val Asp
 225 230 235 240
 Gly Asp Asn His Ser Asp Ile Thr Met Lys Asp Lys Pro Ser Lys Thr
 245 250 255
 Gly Ile Arg Glu Glu Leu Ile Leu Gly Ala Leu Lys Val Arg Asp Ala
 260 265 270
 Asp Phe Pro Glu Asn Ala Asp Gly Ala Phe Pro Trp Gln Ala Lys Leu
 275 280 285
 Asp Ala Lys Ala Gly Ala Ala Lys Val Ser Ser Pro Gly Arg Gln Asn
 290 295 300
 Thr Val Val His Leu Thr Asp Ser Phe Gly Asp Asp Val Val Asp Phe
 305 310 315 320
 Phe Phe Glu Phe Trp Arg Ser Glu Arg Ser Asp Lys Val Phe Glu Gln
 325 330 335
 Arg Phe Tyr Lys Asp Val Ile Asp Asp Val His Val Tyr Asp Gly Asn
 340 345 350
 Gly Ala Trp Arg Ser Leu Asn Leu Asp Leu Asp Lys Phe Glu Ala Leu
 355 360 365
 Arg Lys Asp Pro Lys Leu Gly Phe Glu Lys Leu Leu Val Ser Val Phe
 370 375 380
 Ala Ser Pro Ala Lys Lys Gly Asp Ala Lys Val Gly Tyr Ser Thr Ala
 385 390 395 400
 Thr Gly Arg Asp Ile Gly Ala Trp His Val Glu Gly Arg Asp Phe Ala
 405 410 415
 Lys Ala Phe Thr Pro His Arg Thr Leu Phe Val Asp Ile Glu Ile Pro
 420 425 430
 Arg Ile Val Asp Asp Ala Val Phe Arg Phe Arg Glu
 435 440

<210> 41
 <211> 1419
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 41
 atgacgtcc gatcaacgga ctagcgctg ctggcgcagg agagctacca cgacagccag 60
 gtggacgccc acgtcaagct ggatggcggt gcgtataaaag ttttcgcccc caccagcgac 120
 gggctcaccc gattccaggc cacggctac cagcgccagg acaccggcga ggttgttatt 180
 gcgttaccgcg gcacggagtt tgatcgcgag cccgtccgcg acggcggcgt cgatgcggc 240
 atgggtctgc tcggtgtaa cgacacaggca ccagcgctgg aagtgttac ccggcaagtg 300
 atcgagaagg cgaaacacga agccgagctc aacgaccgcg aaccgcagat caccgtcacc 360
 ggccattccc tcggcggcac cctcgccgag atcaacgccc cgaagtacgg cctccatggc 420
 gaaaccttca acgcctacgg cgcaagccagc ctcaaggta ttccggaggg cggcgatacc 480
 gtcatcgacc acgtccgtgc cggcgatctc gtcagcgccg ccagccccca ctacggcag 540

gtacgcgtct acgcggcgca	gcaggacatc	gatacgctgc	aacacgccgg	ttaccgcgat	600
gacagccgca	tcctcagctt	gchgcaacccg	atcaaggcca	cggatttcga	660
atcgataact	tcgtccccaa	cagcaagctg	ctcggtcagt	cgatcatcg	720
gtggcgcgtt	acgatgccc	caaaggcatg	gtcgaccgtt	accgcgatga	780
atccgcaagg	gcatctcgcc	gccctggaa	atccccaaagg	ccatcgccga	840
accctggagc	acgaagcctt	cgaactcgcc	ggcaagggca	ttctcgccgt	900
ttcgaacatc	tcaaggagga	gatcgccgaa	ggcatccacg	ccgtggagga	960
agcgcgtggc	ataccctcac	ccatcccaag	gaatggttcg	agcacgataa	1020
accctggacc	acccggacca	ccccgaccat	gccctgttca	agcaggcgca	1080
cacacagtgc	atgcctcgca	cggccgcacc	cctgacaaga	ccagcgacca	1140
tcgctgtgg	tatcgccacg	ccgtgacggc	cttgagcggg	tagaccgcgc	1200
gatgacgcca	acccgctgt	cggtgtgcag	ggtgcgggtt	actgcgcgt	1260
accgaagtga	acaccgccc	cggccgcag	acatcgctcc	agcagagcag	1320
cagcaacagg	cagaaatcgc	gcgtcagaac	caggcggcaa	cgaggctca	1380
cagcaggtgc	cgccgcaggc	acccgcgcac	ggcatgtaa		1419

<210> 42

<211> 472

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 42

Met Thr Leu Arg Ser Thr Asp Tyr Ala	Leu	Leu Ala Gln Glu Ser Tyr		
1	5	10	15	
His Asp Ser Gln Val Asp Ala Asp Val	Lys	Leu Asp Gly Val Ala Tyr		
20	25	30		
Lys Val Phe Ala Thr Thr Ser Asp Gly	Leu	Thr Gly Phe Gln Ala Thr		
35	40	45		
Ala Tyr Gln Arg Gln Asp Thr Gly Glu	Val	Val Ile Ala Tyr Arg Gly		
50	55	60		
Thr Glu Phe Asp Arg Glu Pro Val Arg	Asp	Gly Gly Val Asp Ala Gly		
65	70	75	80	
Met Val Leu Leu Gly Val Asn Ala	Gln	Ala Pro Ala Ser Glu Val Phe		
85	90	95		
Thr Arg Gln Val Ile Glu Lys Ala	Lys	His Glu Ala Glu Leu Asn Asp		
100	105	110		
Arg Glu Pro Gln Ile Thr Val Thr	Gly	His Ser Leu Gly Gly Thr Leu		
115	120	125		
Ala Glu Ile Asn Ala Ala Lys	Tyr	Gly Leu His Gly Glu Thr Phe Asn		
130	135	140		
Ala Tyr Gly Ala Ala Ser Leu Lys	Gly	Ile Pro Glu Gly Asp Thr		
145	150	155	160	
Val Ile Asp His Val Arg Ala Gly	Asp	Leu Val Ser Ala Ala Ser Pro		
165	170	175		
His Tyr Gly Gln Val Arg Val	Tyr	Ala Ala Gln Gln Asp Ile Asp Thr		
180	185	190		
Leu Gln His Ala Gly Tyr Arg Asp	Asp	Ser Gly Ile Leu Ser Leu Arg		
195	200	205		
Asn Pro Ile Lys Ala Thr Asp	Phe	Asp Ala His Ala Ile Asp Asn Phe		
210	215	220		
Val Pro Asn Ser Lys Leu Leu Gly	Gln	Ser Ile Ile Ala Pro Glu Asn		
225	230	235	240	
Val Ala Arg Tyr Asp Ala His Lys	Gly	Met Val Asp Arg Tyr Arg Asp		
245	250	255		

Asp Val Ala Asp Ile Arg Lys Gly Ile Ser Ala Pro Trp Glu Ile Pro
 260 265 270
 Lys Ala Ile Gly Glu Leu Lys Asp Thr Leu Glu His Glu Ala Phe Glu
 275 280 285
 Leu Ala Gly Lys Gly Ile Leu Ala Val Glu His Gly Phe Glu His Leu
 290 295 300
 Lys Glu Glu Ile Gly Glu Gly Ile His Ala Val Glu Glu Lys Ala Ser
 305 310 315 320
 Ser Ala Trp His Thr Leu Thr His Pro Lys Glu Trp Phe Glu His Asp
 325 330 335
 Lys Pro Lys Val Thr Leu Asp His Pro Asp His Pro Asp His Ala Leu
 340 345 350
 Phe Lys Gln Ala Gln Gly Ala Val His Thr Val Asp Ala Ser His Gly
 355 360 365
 Arg Thr Pro Asp Lys Thr Ser Asp Gln Ile Ala Gly Ser Leu Val Val
 370 375 380
 Ser Ala Arg Arg Asp Gly Leu Glu Arg Val Asp Arg Ala Val Leu Ser
 385 390 395 400
 Asp Asp Ala Asn Arg Leu Tyr Gly Val Gln Gly Ala Val Asp Ser Pro
 405 410 415
 Leu Lys Gln Val Thr Glu Val Asn Thr Ala Thr Ala Ala Gln Thr Ser
 420 425 430
 Leu Gln Gln Ser Ser Val Ala Trp Gln Gln Gln Ala Glu Ile Ala Arg
 435 440 445
 Gln Asn Gln Ala Ala Ser Gln Ala Gln Arg Met Asp Gln Gln Val Pro
 450 455 460
 Pro Gln Ala Pro Ala His Gly Met
 465 470

<210> 43
 <211> 1287
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 43					
atgtcgatttacccg	ggccctcc	ggcgggttg	gaggatagt	tcctcaagcg	60
aaaattgaga	accttgtttt	cgagggcgcc	ggaccaaagg	gcctggctta	120
gtcgagggttc	tcggtaaaag	gggactgctg	gaaggatcg	caaatgtcg	180
gcaggcgcca	tgaccgctt	agccgtcggt	ctgggactga	gcccccaggga	240
gtcgcttta	accagaacat	tgcggacctc	accgatatcg	aattcgcg	300
tccggatca	caggcatgtt	caagagcgtg	ttcaagaagg	cgagccgtcc	360
gtaaccggca	cctctgacga	gcmcggcgc	gggctctatc	ggtgcgcaac	420
tggatcagag	acctgttgc	acagcgagtc	gaggcaggc	gttcagaggt	480
gccgacccg	acggggcgaa	cttctatgag	aaagccccc	gctgagccga	540
tttgcgcAAC	tttgcgcgggt	ggcgcAAATG	ggcggggcc	tgcggcttc	600
ttcacccggaa	ccaacttcac	gtcgaagaag	tcgcgaatgt	ccgcctggcc	660
gacatgccg	tcgacgtcgc	ggtaacgcato	tcggcatcg	tttcaaattcc	720
gtgaaatgga	acggctccg	atacatagat	ggcggatgcc	tgcgaactt	780
atattcgacg	tcgatcccta	tcgtggcgac	gcatgtcga	cccaatgccc	840
ggccagaacc	tcgcgcacgt	cggttcaag	gtcgacagcg	cgcatcttc	900
ctctggcgta	gccccgagag	cacgacgcac	ggcttttcc	aggagcatct	960
aaaggcctcg	cagaacactg	ggtcgtcgcc	atcgatgtcg	gtcaagcgtg	1020
aacgtggccg	ttcacggcaa	gtatgctcag	cgaaacgatcc	ccgcgcgtcg	1080
agcacgttca	agttcgatct	ctcagacgcg	gacaaggagc	ggccggcgca	1140

aaggccacgc gggaatggct ggcgctgtac ttgcacgacg ccgaaataga ggtcgaattt	1200
tctgatccga acgaattgcg cggccagttt tccgacgccc cattcgcaga cctcgaggat	1260
tcgttcgag ccttgatcgc gccttag	1287

<210> 44

<211> 428

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 44

Met Ser Ile Thr Val Tyr Arg Lys Pro Ser Gly Gly Phe Gly Ala Ile			
1	5	10	15
Val Pro Gln Ala Lys Ile Glu Asn Leu Val Phe Glu Gly Gly Pro			
20	25	30	
Lys Gly Leu Val Tyr Val Gly Ala Val Glu Val Leu Gly Glu Arg Gly			
35	40	45	
Leu Leu Glu Gly Ile Ala Asn Val Gly Gly Ala Ser Ala Gly Ala Met			
50	55	60	
Thr Ala Leu Ala Val Gly Leu Gly Leu Ser Pro Arg Glu Ile Arg Ala			
65	70	75	80
Val Val Phe Asn Gln Asn Ile Ala Asp Leu Thr Asp Ile Glu Lys Thr			
85	90	95	
Val Glu Pro Ser Ser Gly Ile Thr Gly Met Phe Lys Ser Val Phe Lys			
100	105	110	
Lys Gly Trp Gln Ala Val Arg Asn Val Thr Gly Thr Ser Asp Glu Arg			
115	120	125	
Gly Arg Gly Leu Tyr Arg Gly Glu Lys Leu Arg Ala Trp Ile Arg Asp			
130	135	140	
Leu Ile Ala Gln Arg Val Glu Ala Gly Arg Ser Glu Val Leu Ser Arg			
145	150	155	160
Ala Asp Ala Asp Gly Arg Asn Phe Tyr Glu Lys Ala Ala Ala Lys Lys			
165	170	175	
Gly Ala Leu Thr Phe Ala Glu Leu Asp Arg Val Ala Gln Met Ala Pro			
180	185	190	
Gly Leu Arg Leu Arg Arg Leu Ala Phe Thr Gly Thr Asn Phe Thr Ser			
195	200	205	
Lys Lys Leu Glu Val Phe Ser Leu His Glu Thr Pro Asp Met Pro Ile			
210	215	220	
Asp Val Ala Val Arg Ile Ser Ala Ser Leu Pro Trp Phe Phe Lys Ser			
225	230	235	240
Val Lys Trp Asn Gly Ser Glu Tyr Ile Asp Gly Gly Cys Leu Ser Asn			
245	250	255	
Phe Pro Met Pro Ile Phe Asp Val Asp Pro Tyr Arg Gly Asp Ala Ser			
260	265	270	
Ser Lys Ile Arg Leu Gly Ile Phe Gly Gln Asn Leu Ala Thr Leu Gly			
275	280	285	
Phe Lys Val Asp Ser Glu Glu Glu Ile Arg Asp Ile Leu Trp Arg Ser			
290	295	300	
Pro Glu Ser Thr Ser Asp Gly Phe Phe Gln Gly Ile Leu Ser Ser Val			
305	310	315	320
Lys Ala Ser Ala Glu His Trp Val Val Gly Ile Asp Val Glu Gly Ala			
325	330	335	
Thr Arg Ala Ser Asn Val Ala Val His Gly Lys Tyr Ala Gln Arg Thr			
340	345	350	

Ile	Gln	Ile	Pro	Asp	Leu	Gly	Tyr	Ser	Thr	Phe	Lys	Phe	Asp	Leu	Ser
355					360					365					
Asp	Ala	Asp	Lys	Glu	Arg	Met	Ala	Glu	Ala	Gly	Ala	Lys	Ala	Thr	Arg
370				375						380					
Glu	Trp	Leu	Ala	Leu	Tyr	Phe	Asp	Asp	Ala	Gly	Ile	Glu	Val	Glu	Phe
385				390					395				400		
Ser	Asp	Pro	Asn	Glu	Leu	Arg	Gly	Gln	Leu	Ser	Asp	Ala	Ala	Phe	Ala
					405				410				415		
Asp	Leu	Glu	Asp	Ser	Phe	Arg	Ala	Leu	Ile	Ala	Ala				
					420				425						

<210> 45
<211> 1038
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 45

atgacaaccc	aatttagaaa	cttgatattt	gaaggcggcg	gtgtaaaagg	tgttgcttac	60
attggcgcca	tgcagattct	cgaaaatcg	ggcggtttgc	aagatattca	ccgagtcgga	120
gggtgcagt	cgggtgcgat	taatgcgtg	atttttgcgc	tgggttacac	gttgcgtgag	180
caaaaagaga	tcttacaagc	caccgattt	aaccagttt	tggataactc	ttgggggtgtt	240
attcgtata	ttcgcaggct	tgctcgagac	tttggcttga	ataagggtga	tttcttttagt	300
agctggatag	gtgattttagt	tcatcgctgt	ttggggaaatc	gccgagcgac	gttcaaagat	360
ctgaaaaatg	ccaagcttcc	tgatctttat	gtcatcggtt	ctaactgttc	tacagggttt	420
gcagagggtt	tttctgccc	aagacacccc	gatatggagc	tggcgacagc	gttgcgtatc	480
tccatgtcga	taccgctgtt	cttgcagcc	gtgcgtcacg	gtgatcgaca	agatgtgtat	540
gtcgatgggg	gtgttcaact	taactatccg	attaaactgt	ttgatcggtt	gcgttacatt	600
gatctggcca	aagatcccgg	tgctgttcgg	cgaacgggtt	attacaacaa	agaaaaacgct	660
cgcttcagc	ttgagcggcc	cggtcatacg	ccctatgttt	acaatcgcca	gaccttgggt	720
ttgcgtcttg	atagtcgca	gcagataggg	ctctttcggt	atgacgaacc	cctcaagggc	780
aaaccattt	agtcccttac	tgactacgct	cgacaaactt	tgcgtgcgtt	gatgaatgca	840
caggaaaaaga	ttcatctaca	tggcgatgtat	tggcaacgca	cggcttatat	cgatacattt	900
gatgtggta	cgacggactt	caatctttct	gatgcaacta	agcaagcact	gattgagcaa	960
ggaattaaacg	gcaccgaaaa	ttatttcgag	tggtttgata	atccgtttaga	gaagcccgtt	1020
aatagagtgg	agtcatag					1038

<210> 46
<211> 345
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 46

Met	Thr	Thr	Gln	Phe	Arg	Asn	Leu	Ile	Phe	Glu	Gly	Gly	Gly	Val	Lys
1				5				10					15		
Gly	Val	Ala	Tyr	Ile	Gly	Ala	Met	Gln	Ile	Leu	Glu	Asn	Arg	Gly	Val
					20			25					30		
Leu	Gln	Asp	Ile	His	Arg	Val	Gly	Gly	Cys	Ser	Ala	Gly	Ala	Ile	Asn
					35			40					45		
Ala	Leu	Ile	Phe	Ala	Leu	Gly	Tyr	Thr	Val	Arg	Glu	Gln	Lys	Glu	Ile
					50			55					60		
Leu	Gln	Ala	Thr	Asp	Phe	Asn	Gln	Phe	Met	Asp	Asn	Ser	Trp	Gly	Val

65	70	75	80
Ile Arg Asp Ile Arg Arg Leu Ala Arg Asp Phe Gly Trp Asn Lys Gly			
85	90	95	
Asp Phe Phe Ser Ser Trp Ile Gly Asp Leu Ile His Arg Arg Leu Gly			
100	105	110	
Asn Arg Arg Ala-Thr Phe Lys Asp Leu Gln Asn Ala Lys Leu Pro Asp			
115	120	125	
Leu Tyr Val Ile Gly Thr Asn Leu Ser Thr Gly Phe Ala Glu Val Phe			
130	135	140	
Ser Ala Glu Arg His Pro Asp Met Glu Leu Ala Thr Ala Val Arg Ile			
145	150	155	160
Ser Met Ser Ile Pro Leu Phe Phe Ala Ala Val Arg His Gly Asp Arg			
165	170	175	
Gln Asp Val Tyr Val Asp Gly Gly Val Gln Leu Asn Tyr Pro Ile Lys			
180	185	190	
Leu Phe Asp Arg Glu Arg Tyr Ile Asp Leu Ala Lys Asp Pro Gly Ala			
195	200	205	
Val Arg Arg Thr Gly Tyr Tyr Asn Lys Glu Asn Ala Arg Phe Gln Leu			
210	215	220	
Glu Arg Pro Gly His Ser Pro Tyr Val Tyr Asn Arg Gln Thr Leu Gly			
225	230	235	240
Leu Arg Leu Asp Ser Arg Glu Gln Ile Gly Leu Phe Arg Tyr Asp Glu			
245	250	255	
Pro Leu Lys Gly Lys Pro Ile Lys Ser Phe Thr Asp Tyr Ala Arg Gln			
260	265	270	
Leu Phe Gly Ala Leu Met Asn Ala Gln Glu Lys Ile His Leu His Gly			
275	280	285	
Asp Asp Trp Gln Arg Thr Val Tyr Ile Asp Thr Leu Asp Val Gly Thr			
290	295	300	
Thr Asp Phe Asn Leu Ser Asp Ala Thr Lys Gln Ala Leu Ile Glu Gln			
305	310	315	320
Gly Ile Asn Gly Thr Glu Asn Tyr Phe Glu Trp Phe Asp Asn Pro Leu			
325	330	335	
Glu Lys Pro Val Asn Arg Val Glu Ser			
340	345		

<210> 47

<211> 1476

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 47

atgtcaacaa aagtagtatt tgcatacatgga tggagcgtta ccaacctaaa tacatatggc	60
gaacctccgt tgagattaaa ggccgaagca ataaggcaggaa acctgaacat cgaagtaaat	120
gaaattttcc tgggccgtta tattcagcttt aatgataaca ttacattttaga tgacgtttcg	180
cgggctttta atacggccat tagcgaacag tttagacaata cagacaggtt tatatgtatt	240
acacattctta ccggagggcc ggttattcgc gaatggttaa ataaatacta ttataatgaa	300
cgtccaccac taagtcattt aataatgctt gcacccggcca attttgggttc ggcattggct	360
cgttttaggga aaagtaaatt aagccgtatt aaaagtttgtt ttgaagggtt agaaccaggg	420
cagaaaaattt tagactgct ggagtgtgga agcaaccaat cgtggttact aaataaagac	480
tggatcgaca atggcaattt tcagattggc gctgataagt atttcccgtt tgttatcatt	540
ggccagtcga ttgatcgtaa actttacgat catcttaact catataccgg cgagcttggg	600
tccgatggtg tagttcgcac ctcaggagct aatcttaatt cgccgttatat taagcttgg	660
caggacagaa atacaatagc taatggaaat atttccagta cattacgaat tgccgaatat	720

agagaagctt	gtgcaacgccc	catacggta	gttagaggta	aatcgcattc	gggcgatgaa	780
atgggtatca	tggaaaagtgt	taaaaaagaa	attactgatg	ccggaagcaa	ggaaacaata	840
aatgccatat	tcgagtttat	tgaagttaca	aacaacgaac	aatatcaatc	cttaattact	900
aaatttgata	acgaaacacgc	acaggtacaa	aaggatgagc	tgattgaaac	ggaaacagaa	960
ttattttaa	tgcaccgtca	tttcattcac	gaccgcttt	cgcaattcat	ttttaaagta	1020
actgactcag	aagggaacc	tgttacagat	tatgatttaa	tttttacagc	cgggccccaa	1080
aacgatgcga	accacttacc	ggaaggattt	gccattgaca	ggcaacaaaa	ttcaaataat	1140
aacgaaacca	ttacgttatta	tttaattac	gatgtattga	aaggggctcc	cgcaaatgtt	1200
taccggacg	cattaccagg	tatcttatg	ctggggctaa	ccataaacc	aaggccggac	1260
gaaggtttg	taagatataat	cccatgcage	attaaagcca	attccgagtt	gatggaaaaaa	1320
gccttaaac	caaattctac	tacctggtc	gatattgtt	ttcaacgtgt	agtttagcaaa	1380
gaagttttc	ggttggaaaa	gttaactgg	agctcaatgc	caacagacaa	agatggaaat	1440
tttaaaaata	ctgaacctgg	taacgaaata	atatga			1476

<210> 48
<211> 491
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 48						
Met Ser Thr Lys Val Val Phe Val His Gly Trp Ser Val Thr Asn Leu						
1	5	10	15			
Asn Thr Tyr Gly Glu Leu Pro Leu Arg Leu Lys Ala Glu Ala Ile Ser						
20	25	30				
Arg Asn Leu Asn Ile Glu Val Asn Glu Ile Phe Leu Gly Arg Tyr Ile						
35	40	45				
Ser Phe Asn Asp Asn Ile Thr Leu Asp Asp Val Ser Arg Ala Phe Asn						
50	55	60				
Thr Ala Ile Ser Glu Gln Leu Asp Asn Thr Asp Arg Phe Ile Cys Ile						
65	70	75	80			
Thr His Ser Thr Gly Gly Pro Val Ile Arg Glu Trp Leu Asn Lys Tyr						
85	90	95				
Tyr Tyr Asn Glu Arg Pro Pro Leu Ser His Leu Ile Met Leu Ala Pro						
100	105	110				
Ala Asn Phe Gly Ser Ala Leu Ala Arg Leu Gly Lys Ser Lys Leu Ser						
115	120	125				
Arg Ile Lys Ser Trp Phe Glu Gly Val Glu Pro Gly Gln Lys Ile Leu						
130	135	140				
Asp Trp Leu Glu Cys Gly Ser Asn Gln Ser Trp Leu Leu Asn Lys Asp						
145	150	155	160			
Trp Ile Asp Asn Gly Asn Phe Gln Ile Gly Ala Asp Lys Tyr Phe Pro						
165	170	175				
Phe Val Ile Ile Gly Gln Ser Ile Asp Arg Lys Leu Tyr Asp His Leu						
180	185	190				
Asn Ser Tyr Thr Gly Glu Leu Gly Ser Asp Gly Val Val Arg Thr Ser						
195	200	205				
Gly Ala Asn Leu Asn Ser Arg Tyr Ile Lys Leu Val Gln Asp Arg Asn						
210	215	220				
Thr Ile Ala Asn Gly Asn Ile Ser Ser Thr Leu Arg Ile Ala Glu Tyr						
225	230	235	240			
Arg Glu Ala Cys Ala Thr Pro Ile Arg Val Val Arg Gly Lys Ser His						
245	250	255				
Ser Gly Asp Glu Met Gly Ile Met Lys Ser Val Lys Lys Glu Ile Thr						
260	265	270				

Asp Ala Gly Ser Lys Glu Thr Ile Asn Ala Ile Phe Glu Cys Ile Glu
 275 280 285
 Val Thr Asn Asn Glu Gln Tyr Gln Ser Leu Ile Thr Lys Phe Asp Asn
 290 295 300
 Glu Thr Ala Gln Val Gln Lys Asp Glu Leu Ile Glu Thr Glu Thr Glu
 305 310 315 320
 Leu Phe Leu Met His Arg His Phe Ile His Asp Arg Phe Ser Gln Phe
 325 330 335
 Ile Phe Lys Val Thr Asp Ser Glu Gly Gln Pro Val Thr Asp Tyr Asp
 340 345 350
 Leu Ile Phe Thr Ala Gly Pro Gln Asn Asp Ala Asn His Leu Pro Glu
 355 360 365
 Gly Phe Ala Ile Asp Arg Gln Gln Asn Ser Asn Asn Glu Thr Ile
 370 375 380
 Thr Tyr Tyr Phe Asn Tyr Asp Val Leu Lys Gly Ala Pro Ala Asn Val
 385 390 395 400
 Tyr Arg Asp Ala Leu Pro Gly Ile Ser Met Leu Gly Leu Thr Ile Asn
 405 410 415
 Pro Arg Pro Asp Glu Gly Phe Val Arg Tyr Ile Pro Cys Ser Ile Lys
 420 425 430
 Ala Asn Ser Glu Leu Met Glu Lys Ala Phe Lys Pro Asn Ser Thr Thr
 435 440 445
 Leu Val Asp Ile Val Ile Gln Arg Val Val Ser Lys Glu Val Phe Arg
 450 455 460
 Leu Glu Lys Leu Thr Gly Ser Ser Met Pro Thr Asp Lys Asp Gly Asn
 465 470 475 480
 Phe Lys Asn Thr Glu Pro Gly Asn Glu Ile Ile
 485 490

<210> 49

<211> 1257

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 49
 atgaatttt ggtcctttct tcttagtata accttaccta tggggtagg cgttgctcat 60
 gcacagcccg atacggattt tcaatcggtc gagccttatg tctcttctgc gccaatgggg 120
 cgacaaacctt atacttacgt gcgttgttgg tatcgcacca gccacagtac ggatgatcca 180
 gcgacagatt ggcagtgggc gagaaaactcc gatggtagct attttacttt gcaaggatac 240
 tggtgagct cggtaagact aaaaaatatg ttttacactc aaacctcgca aaatgttatt 300
 cgtcagcgct gcgAACACAC tttaaagcatt aatcatgata atgcggatat tacttttat 360
 gcccggata atcgTTTCTC attaaaccat acgatttggt cgaatgatcc tgcatgcag 420
 gctaataaaa tcaacaagat tgtcgcgtt ggtgacagct tgcgcatac cggtaatatt 480
 tttaatgccg cgcagtggcg ttttcctaat cccaaatagtt gtttttggg gcattttct 540
 aacggTTTGG tatggactga gtacttagt aaacagaaaa acttaccgat atataactgg 600
 gcggtgggtg gcgctgctgg ggcgaatcaa tatgtggcgt taaccgggt tacaggccaa 660
 gtgaactctt attacagta catggtaaa ggcacAAact atcgtccaca gaataccctg 720
 tacactttgg tcttcgggtt gaatgatttt atgaattata accgtgaggt tgctgaggtg 780
 gcggtcgatt ttgaaacggc attacagcgt ttaacgcaag ctggcgcgc aaatatttt 840
 atgatgacgc taccggatgt gactaaagca ccacagttt cctactcaac tcaagcggaa 900
 atcgacttga ttcaaggtaa aatcaatgcg ttgaacatca agttaaaaca gttgactgctg 960
 caatatattt tacaaggcta tgcattcat ctatttgata cttatgaggatt atttgattca 1020
 atggtcgctg aaccggaaaaa gcatggctt gctaattgcca gtgaaccttgg tttgaatctc 1080
 acccgTTCTT cagcggcgga ttatttgatc cgtcatcccc ttaccaatac ttgtgctcg 1140

tatggtcag acaaatttgc attttggat gtcacccatc caaccacggc aactcatcg 1200
 tatatttcac aaacgctgtt agcgccgggt aatggattac aatatttaa tttttaa 1257

<210> 50
 <211> 418
 <212> PRT -
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<221> SIGNAL
 <222> (1)...(23)

<400> 50
 Met Asn Phe Trp Ser Phe Leu Leu Ser Ile Thr Leu Pro Met Gly Val
 1 5 10 15
 Gly Val Ala His Ala Gln Pro Asp Thr Asp Phe Gln Ser Ala Glu Pro
 20 25 30
 Tyr Val Ser Ser Ala Pro Met Gly Arg Gln Thr Tyr Thr Tyr Val Arg
 35 40 45
 Cys Trp Tyr Arg Thr Ser His Ser Thr Asp Asp Pro Ala Thr Asp Trp
 50 55 60
 Gln Trp Ala Arg Asn Ser Asp Gly Ser Tyr Phe Thr Leu Gln Gly Tyr
 65 70 75 80
 Trp Trp Ser Ser Val Arg Leu Lys Asn Met Phe Tyr Thr Gln Thr Ser
 85 90 95
 Gln Asn Val Ile Arg Gln Arg Cys Glu His Thr Leu Ser Ile Asn His
 100 105 110
 Asp Asn Ala Asp Ile Thr Phe Tyr Ala Ala Asp Asn Arg Phe Ser Leu
 115 120 125
 Asn His Thr Ile Trp Ser Asn Asp Pro Val Met Gln Ala Asn Gln Ile
 130 135 140
 Asn Lys Ile Val Ala Phe Gly Asp Ser Leu Ser Asp Thr Gly Asn Ile
 145 150 155 160
 Phe Asn Ala Ala Gln Trp Arg Phe Pro Asn Pro Asn Ser Trp Phe Leu
 165 170 175
 Gly His Phe Ser Asn Gly Leu Val Trp Thr Glu Tyr Leu Ala Lys Gln
 180 185 190
 Lys Asn Leu Pro Ile Tyr Asn Trp Ala Val Gly Gly Ala Ala Gly Ala
 195 200 205
 Asn Gln Tyr Val Ala Leu Thr Gly Val Thr Gly Gln Val Asn Ser Tyr
 210 215 220
 Leu Gln Tyr Met Gly Lys Ala Gln Asn Tyr Arg Pro Gln Asn Thr Leu
 225 230 235 240
 Tyr Thr Leu Val Phe Gly Leu Asn Asp Phe Met Asn Tyr Asn Arg Glu
 245 250 255
 Val Ala Glu Val Ala Ala Asp Phe Glu Thr Ala Leu Gln Arg Leu Thr
 260 265 270
 Gln Ala Gly Ala Gln Asn Ile Leu Met Met Thr Leu Pro Asp Val Thr
 275 280 285
 Lys Ala Pro Gln Phe Thr Tyr Ser Thr Gln Ala Glu Ile Asp Leu Ile
 290 295 300
 Gln Gly Lys Ile Asn Ala Leu Asn Ile Lys Leu Lys Gln Leu Thr Ala
 305 310 315 320
 Gln Tyr Ile Leu Gln Gly Tyr Ala Ile His Leu Phe Asp Thr Tyr Glu
 325 330 335

Leu Phe Asp Ser Met Val Ala Glu Pro Glu Lys His Gly Phe Ala Asn
 340 345 350
 Ala Ser Glu Pro Cys Leu Asn Leu Thr Arg Ser Ser Ala Ala Asp Tyr
 355 360 365
 Leu Tyr Arg His Pro Ile Thr Asn Thr Cys Ala Arg Tyr Gly Ala Asp
 370 375 380
 Lys Phe Val Phe Trp Asp Val Thr His Pro Thr Thr Ala Thr His Arg
 385 390 395 400
 Tyr Ile Ser Gln Thr Leu Leu Ala Pro Gly Asn Gly Leu Gln Tyr Phe
 405 410 415
 Asn Phe

<210> 51
 <211> 1482
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 51

atgacaatcc	gctcaacgga	ctatgcgtcg	ctcgcgagg	agagctacca	cgacagccag	60
gtcgatgccg	acgtcaaact	cgatggcatc	gcctacaagg	tttcgccac	caccgatgac	120
ccgctcacgg	gttccaggc	caccgcgtac	cagcgccagg	acacccggcg	agtgcgtcatc	180
gcctatcg	gtacggatt	cgaccgcgag	ccggttcg	acggccggcg	cgatgcccgc	240
atggtgctgc	tgggggtgaa	tgcccaagtgc	cctgcctccg	agctatttac	ccgcgaagtg	300
atcgagaagg	cgacgcacga	agccgaactc	aatgaccgcg	agccccggat	caccgtgact	360
ggccactccc	tcggcggcac	cctccggaa	atcaacgcgg	ccaagtacgg	cctgcacggc	420
gaaaccttca	acgcatacgg	tgccggcagc	ctcaaggcga	tcccggaaagg	cgcaataacc	480
gtgatcgacc	acgtgcgcgc	tggcgacctc	gtcagcgccg	ccagccgcga	ttacgggcag	540
gtgcgcgtct	acgcggccca	gcaggatatc	gacacccgtc	agcatgcccgg	ctaccgcgac	600
gacagcggca	tccttagcct	gwgcaaccccg	atcaaggcga	cggatttcg	cgcgcacgccc	660
atcgacaact	tcgtgcggaa	cagcaaactg	cttggccagt	cgatcatcg	gccggaaaac	720
gaagccgtt	acgaagccca	caagggcatg	gtcgaccgct	accgcgatga	cgtggctgac	780
atccgcatgc	tcgtctccgc	tcccctgaac	atcccgcgca	ccatcgccga	tatcaaggat	840
gcccgttggaa	gwgaggcatt	tgagctggct	ggcaaggcga	tcctcgccgt	tgaacacggc	900
atcgaaagagg	tcgtgcacga	ggcaaaggaa	ggcttcg	acctaaggaa	aggctttgag	960
cacctgaagg	aagaagtctg	cgagggcttc	catgccttcg	aggaaaaggc	ctccagcg	1020
tggcatacgc	tgaccatcc	caaggaatgg	ttcgagc	acaagccgc	ggtcgccctg	1080
aaccacccac	agcaccccg	caacgaactg	ttcaagaagg	tgctcg	cgtgcaccag	1140
gttgcatacg	agcagggtcg	ttcacccgac	cagctcagt	agaacctggc	cgcatcg	1200
accgttgcgc	cacgcaagga	aggcctggac	aaggtaacc	acgtgctgt	cgacgacccc	1260
ggcattcgca	cctacgcccgt	gcagggtgag	ctcaactcg	cgttgaagca	ggtctccagt	1320
gtcgataacg	cccaggcggt	cgcacacccg	gtggccaga	gcagcgcgc	atggcagcag	1380
gctgccgagg	cgcggcagggc	acagcacaat	gaggcgctt	cgcagcagca	ggcgcacacag	1440
cagcagaaca	accggcccaa	ccatggggtt	gccggccgt	ga		1482

<210> 52
 <211> 493
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 52

Met Thr Ile Arg Ser Thr Asp Tyr Ala Leu Leu Ala Gln Glu Ser Tyr
 1 5 10 15
 His Asp Ser Gln Val Asp Ala Asp Val Lys Leu Asp Gly Ile Ala Tyr
 20 25 30
 Lys Val Phe Ala Thr Thr Asp Asp Pro Leu Thr Gly Phe Gln Ala Thr
 35 40 45
 Ala Tyr Gln Arg Gln Asp Thr Gly Glu Val Val Ile Ala Tyr Arg Gly
 50 55 60
 Thr Glu Phe Asp Arg Glu Pro Val Arg Asp Gly Gly Val Asp Ala Gly
 65 70 75 80
 Met Val Leu Leu Gly Val Asn Ala Gln Ser Pro Ala Ser Glu Leu Phe
 85 90 95
 Thr Arg Glu Val Ile Glu Lys Ala Thr His Glu Ala Glu Leu Asn Asp
 100 105 110
 Arg Glu Pro Arg Ile Thr Val Thr Gly His Ser Leu Gly Gly Thr Leu
 115 120 125
 Ala Glu Ile Asn Ala Ala Lys Tyr Gly Leu His Gly Glu Thr Phe Asn
 130 135 140
 Ala Tyr Gly Ala Ala Ser Leu Lys Gly Ile Pro Glu Gly Gly Asn Thr
 145 150 155 160
 Val Ile Asp His Val Arg Ala Gly Asp Leu Val Ser Ala Ala Ser Pro
 165 170 175
 His Tyr Gly Gln Val Arg Val Tyr Ala Ala Gln Asp Ile Asp Thr
 180 185 190
 Leu Gln His Ala Gly Tyr Arg Asp Asp Ser Gly Ile Leu Ser Leu Arg
 195 200 205
 Asn Pro Ile Lys Ala Thr Asp Phe Asp Ala His Ala Ile Asp Asn Phe
 210 215 220
 Val Pro Asn Ser Lys Leu Leu Gly Gln Ser Ile Ile Ala Pro Glu Asn
 225 230 235 240
 Glu Ala Arg Tyr Glu Ala His Lys Gly Met Val Asp Arg Tyr Arg Asp
 245 250 255
 Asp Val Ala Asp Ile Arg Met Leu Val Ser Ala Pro Leu Asn Ile Pro
 260 265 270
 Arg Thr Ile Gly Asp Ile Lys Asp Ala Val Glu Arg Glu Ala Phe Glu
 275 280 285
 Leu Ala Gly Lys Gly Ile Leu Ala Val Glu His Gly Ile Glu Glu Val
 290 295 300
 Val His Glu Ala Lys Glu Gly Phe Glu His Leu Lys Glu Gly Phe Glu
 305 310 315 320
 His Leu Lys Glu Glu Val Ser Glu Gly Phe His Ala Phe Glu Glu Lys
 325 330 335
 Ala Ser Ser Ala Trp His Thr Leu Thr His Pro Lys Glu Trp Phe Glu
 340 345 350
 His Asp Lys Pro Gln Val Ala Leu Asn His Pro Gln His Pro Asp Asn
 355 360 365
 Glu Leu Phe Lys Lys Val Leu Glu Gly Val His Gln Val Asp Ala Lys
 370 375 380
 Gln Gly Arg Ser Pro Asp Gln Leu Ser Glu Asn Leu Ala Ala Ser Leu
 385 390 395 400
 Thr Val Ala Ala Arg Lys Glu Gly Leu Asp Lys Val Asn His Val Leu
 405 410 415
 Leu Asp Asp Pro Gly Ile Arg Thr Tyr Ala Val Gln Gly Glu Leu Asn
 420 425 430
 Ser Pro Leu Lys Gln Val Ser Ser Val Asp Asn Ala Gln Ala Val Ala
 435 440 445
 Thr Pro Val Ala Gln Ser Ser Ala Gln Trp Gln Gln Ala Ala Glu Ala

450	455	460
Arg Gln Ala Gln His Asn Glu Ala Leu Ala Gln Gln Gln Ala Gln Gln		
465	470	475
Gln Gln Asn Asn Arg Pro Asn His Gly Val Ala Gly Pro		
	485	490

<210> 53

<211> 1491

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 53

atgcgtcagg ttacattagt atttgttcat ggctacagcg ttacaaacat cgacacttat	60
ggtgaaatgc cactcaggt ccgcaacgaa ggagccacac gtgatataga aataaaaatt	120
gagaacattt tcctggggcg ctacatcagc tttaatgatg atgtgagatt aaatgatgtt	180
tccagagcat tggaaacagc cgtacaacaa cagattgcac cggaaataa aaacaattcc	240
cgttacgtat tcacatcccc ca tctaccggc ggaccggtag tgagaaactg gtggatctg	300
tactataaaa acagcacgaa acaatgccct atgagccacc tcattatgct ggctctgcc	360
aattttggct cggcactggc acaactgggaaaagcaaact taagccgcat taaatcctgg	420
ttcgatggtg tggaaacccgg acagaatgta ttgaattggc tggaaactggg aagcgcggaa	480
gcatgaaagc taaacaccga ctggattaag agtgatggaa gtcagatctc ggcacagggt	540
attttcctt ttgtgatcat aggtcaggac attgaccgca aattatacga tcattaaac	600
tcctacaccg gtgagctggg ttccgacggc gtggtgcgtt cgccgcagc caattaaat	660
gctacttatg taaaactcac acaacctaaa cccaccttgg taaatggaaa actggtaaca	720
ggtaatctgg aataggaga agtaaaacaa gcgcctata caccatgcg catcgctca	780
aaaaaatcgc attccaacaa ggatatgggattatgagaa gtgtactgaa atcaacaaat	840
gatgccaaca gcgcgaaac ggtaaacgccc attttgact gcattaatgt gaaaaccta	900
accgattacc agagcattgc cacacagttt gattgcaaa caaaagacgt gcaggaaat	960
tcaattattt aagggaaaaaacgcctt ggaactaaaa actatattca cgaccgtttc	1020
tcccaggtca ttttcagagt aacagacagt gaagggtacc cggttaccag ttttgatctg	1080
atcctcaccg gcggcgaaaaaaatgatccc aacgccttgc ctcagggtt tttgtggac	1140
agacaatgca acagtgtcaa taaatcgacc attactatt tttaaatattcgatattatg	1200
aacggcacac cagctatagc aggtataaga ccggcatcca aaggcatgaa aaaactgggt	1260
ctgatcatta acccaaggcc tgaagaaggc tttgtgcgtt acattccctg caaaataaac	1320
acatcgcccg atttgttga cgccgcttg aaacccaacg ccacaacgct tattgatatt	1380
gtattgcaac gcgtggtaag taccgaagtttgc aaggaacaga cgggtaacg	1440
ccgcctaaaaa aagatttctc gaaagtgaaa cccggaacgg atattatgg a	1491

<210> 54

<211> 496

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 54

Met Arg Gln Val Thr Leu Val Phe Val His Gly Tyr Ser Val Thr Asn			
1	5	10	15
Ile Asp Thr Tyr Gly Glu Met Pro Leu Arg Leu Arg Asn Glu Gly Ala			
20	25	30	
Thr Arg Asp Ile Glu Ile Lys Ile Glu Asn Ile Phe Leu Gly Arg Tyr			
35	40	45	
Ile Ser Phe Asn Asp Asp Val Arg Leu Asn Asp Val Ser Arg Ala Leu			

50	55	60
Glu Thr Ala Val Gln Gln	Ile Ala Pro Gly Asn Lys Asn Asn Ser	
65	70	75
Arg Tyr Val Phe Ile Thr His Ser Thr	Gly Gly Pro Val Val Arg Asn	80
85	90	95
Trp Trp Asp Leu Tyr Tyr Lys Asn Ser	Thr Lys Gln Cys Pro Met Ser	
100	105	110
His Leu Ile Met Leu Ala Pro Ala Asn Phe	Gly Ser Ala Leu Ala Gln	
115	120	125
Leu Gly Lys Ser Lys Leu Ser Arg Ile Lys Ser	Trp Phe Asp Gly Val	
130	135	140
Glu Pro Gly Gln Asn Val Leu Asn Trp	Leu Glu Leu Gly Ser Ala Glu	
145	150	155
Ala Trp Lys Leu Asn Thr Asp Trp Ile Lys Ser	Asp Gly Ser Gln Ile	160
165	170	175
Ser Ala Gln Gly Ile Phe Pro Phe Val Ile Ile	Gly Gln Asp Ile Asp	
180	185	190
Arg Lys Leu Tyr Asp His Leu Asn Ser	Tyr Thr Gly Glu Leu Gly Ser	
195	200	205
Asp Gly Val Val Arg Ser Ala Ala Asn Leu Asn	Ala Thr Tyr Val	
210	215	220
Lys Leu Thr Gln Pro Lys Pro Thr Leu Val Asn	Gly Lys Leu Val Thr	
225	230	235
Gly Asn Leu Glu Ile Gly Glu Val Lys	Gln Ala Pro Tyr Thr Pro Met	
245	250	255
Arg Ile Val Ser Lys Lys Ser His Ser Asn Lys	Asp Met Gly Ile Met	
260	265	270
Arg Ser Val Leu Lys Ser Thr Asn Asp Ala Asn	Ser Ala Glu Thr Val	
275	280	285
Asn Ala Ile Phe Asp Cys Ile Asn Val Lys	Thr Leu Thr Asp Tyr Gln	
290	295	300
Ser Ile Ala Thr Gln Phe Asp Ser Gln Thr	Lys Asp Val Gln Glu Asn	
305	310	315
Ser Ile Ile Glu Arg Glu Lys Thr Pro Phe	Gly Thr Lys Asn Tyr Ile	320
325	330	335
His Asp Arg Phe Ser Gln Val Ile Phe Arg Val	Thr Asp Ser Glu Gly	
340	345	350
Tyr Pro Val Thr Ser Phe Asp Leu Ile Leu	Thr Gly Glu Lys Asn	
355	360	365
Asp Pro Asn Ala Leu Pro Gln Gly Phe Phe Val	Asp Arg Gln Cys Asn	
370	375	380
Ser Val Asn Lys Ser Thr Ile Thr Tyr Phe Leu	Asn Tyr Asp Ile Met	
385	390	395
Asn Gly Thr Pro Ala Ile Ala Gly Ile Arg	Pro Ala Ser Lys Gly Met	
405	410	415
Glu Lys Leu Gly Leu Ile Ile Asn Pro Arg	Pro Glu Glu Gly Phe Val	
420	425	430
Arg Tyr Ile Pro Cys Lys Ile Asn Thr Ser	Pro Asp Leu Phe Asp Ala	
435	440	445
Ala Leu Lys Pro Asn Ala Thr Thr Leu Ile Asp	Ile Val Leu Gln Arg	
450	455	460
Val Val Ser Thr Glu Val Phe Arg Phe Glu	Gly Thr Asp Gly Val Thr	
465	470	475
Pro Pro Lys Lys Asp Phe Ser Lys Val Lys	Pro Gly Thr Asp Ile Ile	480
485	490	495

<210> 55

<211> 1041

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 55

atggcttcac aattcagaaaa	tctggtttt	gaaggaggcg	gtgtgaaggg	catcgcttat	60
atcgccgcca tgcagggtct	ggagcagcgg	ggactgctca	aggatattgt	ccgggtggga	120
ggtaccagtgcaggcgccat	caacgcgtg	atctttcgc	tggccttac	catcaaagag	180
cagcaggata ttctcaactc	caccaacttc	agggagttta	tggacagctc	gttcgggttc	240
atccgaaact tccggaggtt	atggagcgaa	ttcgggttga	accgcggcga	tgtatttcg	300
gactggccg gggagcttgt	gaaagagaag	ctcgccaaa	agaacgcccac	gttcggcgat	360
ctgaaaaagg cgaaacgtcc	cgatctgtac	gtgatcgca	ccaatctctc	tacggggttt	420
tccgagacct ttgcgcacga	acgccacgcc	gacatgcctc	tggtagatgc	ggtgccgata	480
agcatgtcga tcccgtctt	ttttgtcga	cggaggctgg	gaaaacgtaa	ggatgtgtat	540
gtggatggcg gggatgtgt	caactatccc	gtgaagctgt	tcgacaggga	gaagtatatc	600
gatttggaga aagagaatga	ggcggcccgc	tatgtggagt	actacaatca	agagaatgcc	660
cggtttctgc tcgagcggcc	cggccgaagc	ccttatgtgt	ataaccggca	gactctcggt	720
ctgcggctcg acacgcagga	agagatcgcc	ctgttccgtt	acgatgagcc	gctgaagggc	780
aagcagatca accgtttccc	cgaatacgcc	agagccctga	tcggctcgct	gatgcaggta	840
caggagaaca tccacctgaa	aagtgacgac	tggcagcga	cgctctacat	caacacgctg	900
gatgtggca ccaccgattt	cgacattacc	gacgagaaga	aaaaagtgc	ggtgaatgag	960
gggatcaagg gagcggagac	ctatttccgc	tggttttagg	atcccgaaga	aaaaccggtg	1020
aataaggtga atcttgc	a				1041

<210> 56

<211> 346

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 56

Met Ala Ser Gln Phe Arg Asn Leu Val Phe Glu Gly Gly	Gly Val Lys		
1	5	10	15
Gly Ile Ala Tyr Ile Gly Ala Met Gln Val Leu Glu Gln Arg	Gly Leu		
20	25	30	
Leu Lys Asp Ile Val Arg Val Gly Gly Thr Ser Ala Gly	Ala Ile Asn		
35	40	45	
Ala Leu Ile Phe Ser Leu Gly Phe Thr Ile Lys Glu Gln Gln	Asp Ile		
50	55	60	
Leu Asn Ser Thr Asn Phe Arg Glu Phe Met Asp Ser Ser Phe	Gly Phe		
65	70	75	80
Ile Arg Asn Phe Arg Arg Leu Trp Ser Glu Phe Gly Trp Asn Arg	Gly		
85	90	95	
Asp Val Phe Ser Asp Trp Ala Gly Glu Leu Val Lys Glu Lys	Leu Gly		
100	105	110	
Lys Lys Asn Ala Thr Phe Gly Asp Leu Lys Lys Ala Lys Arg	Pro Asp		
115	120	125	
Leu Tyr Val Ile Gly Thr Asn Leu Ser Thr Gly Phe Ser Glu	Thr Phe		
130	135	140	
Ser His Glu Arg His Ala Asp Met Pro Leu Val Asp Ala Val Arg	Ile		
145	150	155	160
Ser Met Ser Ile Pro Leu Phe Phe Ala Ala Arg Arg Leu Gly	Arg		

	165		170		175
Lys Asp Val Tyr Val Asp Gly Gly	Val	Met	Leu Asn Tyr	Pro Val Lys	
180	185			190	
Leu Phe Asp Arg Glu Lys Tyr Ile Asp Leu Glu Lys Glu Asn Glu Ala					
195	200		205		
Ala Arg Tyr Val Glu Tyr Tyr Asn Gln Glu Asn Ala Arg Phe Leu Leu					
210	215		220		
Glu Arg Pro Gly Arg Ser Pro Tyr Val Tyr Asn Arg Gln Thr Leu Gly					
225	230		235		240
Leu Arg Leu Asp Thr Gln Glu Glu Ile Gly Leu Phe Arg Tyr Asp Glu					
245	250			255	
Pro Leu Lys Gly Lys Gln Ile Asn Arg Phe Pro Glu Tyr Ala Arg Ala					
260	265		270		
Leu Ile Gly Ser Leu Met Gln Val Gln Glu Asn Ile His Leu Lys Ser					
275	280		285		
Asp Asp Trp Gln Arg Thr Leu Tyr Ile Asn Thr Leu Asp Val Gly Thr					
290	295		300		
Thr Asp Phe Asp Ile Thr Asp Glu Lys Lys Lys Val Leu Val Asn Glu					
305	310		315		320
Gly Ile Lys Gly Ala Glu Thr Tyr Phe Arg Trp Phe Glu Asp Pro Glu					
325	330			335	
Glu Lys Pro Val Asn Lys Val Asn Leu Val					
340	345				

<210> 57
<211> 1413
<212> DNA
<213> Unkno

<220>
<223> Obtained from an environmental sample.

<210> 58
<211> 470
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 58
Met Gln Leu Val Phe Val His Gly Trp Ser Val Thr His Thr Asn Thr
1 5 10 15
Tyr Gly Glu Leu Pro Glu Ser Leu Ala Ala Gly Ala Ala Thr His Gly
20 25 30
Leu Gln Ile Asp Ile Arg His Val Phe Leu Gly Lys Tyr Ile Ser Phe
35 40 45
His Asp Glu Val Thr Leu Asp Asp Ile Ala Arg Ala Phe Asp Lys Ala
50 55 60
Leu Arg Asp Met Ser Gly Asp Gly Asp Thr Val Ser Pro Phe Ser Cys
65 70 75 80
Ile Thr His Ser Thr Gly Gly Pro Val Val Arg His Trp Ile Asn Lys
85 90 95
Phe Tyr Gly Ala Arg Gly Leu Ser Lys Leu Pro Leu Glu His Leu Val
100 105 110
Met Leu Ala Pro Ala Asn His Gly Ser Ser Leu Ala Val Leu Gly Lys
115 120 125
Gln Arg Leu Gly Arg Ile Lys Ser Trp Phe Asp Gly Val Glu Pro Gly
130 135 140
Gln Lys Val Leu Asp Trp Leu Ser Leu Gly Ser Asn Gly Gln Trp Ala
145 150 155 160
Leu Asn Arg Asp Phe Leu Ser Tyr Arg Pro Ala Lys His Gly Phe Phe
165 170 175
Pro Phe Val Leu Thr Gly Gln Gly Ile Asp Thr Lys Phe Tyr Asp Phe
180 185 190
Leu Asn Ser Tyr Leu Val Glu Pro Gly Ser Asp Gly Val Val Arg Val
195 200 205
Ala Gly Ala Asn Met His Phe Arg Tyr Leu Ser Leu Val Gln Ser Glu
210 215 220
Thr Val Leu His Thr Pro Gly Lys Val Leu Gln Leu Glu Tyr Asn Glu
225 230 235 240
Arg Arg Pro Val Lys Ser Pro Gln Ala Val Pro Met Gly Val Phe Ser
245 250 255
Gln Phe Ser His Ser Gly Asp Lys Met Gly Ile Met Ala Val Lys Arg
260 265 270
Lys Lys Asp Ala His Gln Met Ile Val Thr Glu Val Leu Lys Cys Leu
275 280 285
Cys Val Ser Asp Ser Asp Glu Tyr Gln Gln Arg Gly Leu Glu Leu Ala
290 295 300
Glu Leu Thr Ala Ser Glu Gln Arg Lys Pro Ile Glu Asp Gln Asp Lys
305 310 315 320
Ile Ile Ser Arg Tyr Ser Met Leu Val Phe Arg Val Arg Asp Gln Ala
325 330 335
Gly Asn Thr Ile Gly Val His Asp Phe Asp Ile Leu Leu Leu Ala Gly
340 345 350
Asp Thr Tyr Ser Pro Asp Lys Leu Pro Glu Gly Phe Phe Met Asp Lys
355 360 365
Gln Ala Asn Arg Asp Ala Gly Ser Leu Ile Tyr Tyr Val Asp Ala Asp

370	375	380	
Lys Met Ser Glu Met Lys Asp Gly Cys Tyr Gly		Leu Arg Val Val Val	
385	390	395	400
Arg Pro Glu Lys Gly Phe Ser Tyr Tyr Thr		Gly Glu Phe Arg Ser	
405	410	415	
Glu Gly Ile Pro-Val Asp Arg Val Phe Ala Ala		Asn Glu Thr Thr Tyr	
420	425	430	
Ile Asp Ile Thr Met Asn Arg Ser Val Asp Gln		Asn Val Phe Arg Phe	
435	440	445	
Ser Pro Ala Thr Glu Pro Pro Glu Ser Phe Lys		Arg Thr Thr Pro Ser	
450	455	460	
Gly Thr Asp Ile Pro Ser			
465	470		

<210> 59

<211> 1038

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 59

atgacaacac aatttagaaa cttgatctt	gaaggcggcg	gtgtaaaagg	cgttgcttac	60
attggcgcca tgcagattct	tgaaaatcgt	ggcgtgttgc	aagatattcg	120
gggtgcagtg cgggtgcgt	taacgcgctg	attttgccgc	tggttacac	180
caaaaagaga tcttacaagc	caccgattt	aaccagttt	tggataactc	240
attcgtgata ttgcgaggct	tgctcgagac	tttggcttgg	ataagggtga	300
agctggatag gtgatttgat	tcatcgctgt	ttggggaaatc	gccgagcgac	360
ctgcaaaagg ccaagcttcc	tgatctttat	gtcatcggtt	gttcaaagat	420
gcagaggtgt tttctggca	aagacacccc	gatatggagc	tggcgacagc	480
tccatgtcga taccgctgtt	cttgcggca	gtgcgtcatg	gtgatcgaca	540
gtcgatgggg gtgttcaact	taactatccg	attaaactgt	agatgtgtat	600
gatctggcca aagatccccg	tgccgttccg	cgaacgggtt	ttgatcggtt	660
cgcttcagc ttgatcgccc	ggccatagc	ccctatgttt	attacaacaa	720
ttgcgactgg atagtcgcga	ggagataggg	atgacgaacc	agaaaacgct	780
aaaccattt agtccttac	tgactacgct	cctcaagggc	840	
caggaaaaa ttcatctaca	tggcgatgt	cgacaacttt	gatgaatgca	900
gatgtggta cgacggactt	caatcttct	tcggtgcgcgt	gattgagcaa	960
ggaattaacg gcaccgaaaa	ttatccgac	gatgcaacca	gaagcctgtg	1020
aatagagtgg agtcatag				1038

<210> 60

<211> 345

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 60

Met Thr Thr Gln Phe Arg Asn Leu Ile Phe	Glu Gly Gly	Val Lys	
1	5	10	15
Gly Val Ala Tyr Ile Gly Ala Met Gln Ile	Leu Glu Asn Arg	Gly Val	
20	25	30	
Leu Gln Asp Ile Arg Arg Val Gly Gly	Cys Ser Ala Gly	Ala Ile Asn	
35	40	45	

Ala Leu Ile Phe Ala Leu Gly Tyr Thr Val Arg Glu Gln Lys Glu Ile
 50 55 60
 Leu Gln Ala Thr Asp Phe Asn Gln Phe Met Asp Asn Ser Trp Gly Val
 65 70 75 80
 Ile Arg Asp Ile Arg Arg Leu Ala Arg Asp Phe Gly Trp Asn Lys Gly
 -85 90 95
 Asp Phe Phe Ser Ser Trp Ile Gly Asp Leu Ile His Arg Arg Leu Gly
 100 105 110
 Asn Arg Arg Ala Thr Phe Lys Asp Leu Gln Lys Ala Lys Leu Pro Asp
 115 120 125
 Leu Tyr Val Ile Gly Thr Asn Leu Ser Thr Gly Phe Ala Glu Val Phe
 130 135 140
 Ser Ala Glu Arg His Pro Asp Met Glu Leu Ala Thr Ala Val Arg Ile
 145 150 155 160
 Ser Met Ser Ile Pro Leu Phe Phe Ala Ala Val Arg His Gly Asp Arg
 165 170 175
 Gln Asp Val Tyr Val Asp Gly Gly Val Gln Leu Asn Tyr Pro Ile Lys
 180 185 190
 Leu Phe Asp Arg Glu Arg Tyr Ile Asp Leu Ala Lys Asp Pro Gly Ala
 195 200 205
 Val Arg Arg Thr Gly Tyr Tyr Asn Lys Glu Asn Ala Arg Phe Gln Leu
 210 215 220
 Asp Arg Pro Gly His Ser Pro Tyr Val Tyr Asn Arg Gln Thr Leu Gly
 225 230 235 240
 Leu Arg Leu Asp Ser Arg Glu Glu Ile Gly Leu Phe Arg Tyr Asp Glu
 245 250 255
 Pro Leu Lys Gly Lys Pro Ile Lys Ser Phe Thr Asp Tyr Ala Arg Gln
 260 265 270
 Leu Phe Gly Ala Leu Met Asn Ala Gln Glu Lys Ile His Leu His Gly
 275 280 285
 Asp Asp Trp Gln Arg Thr Val Tyr Ile Asp Thr Leu Asp Val Gly Thr
 290 295 300
 Thr Asp Phe Asn Leu Ser Asp Ala Thr Lys Gln Ala Leu Ile Glu Gln
 305 310 315 320
 Gly Ile Asn Gly Thr Glu Asn Tyr Phe Asp Trp Phe Asp Asn Pro Leu
 325 330 335
 Glu Lys Pro Val Asn Arg Val Glu Ser
 340 345

<210> 61
 <211> 1257
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 61
 atgacattaa aactctccct gctgatcgcg agcctgagcg ccgtgtctcc agcagtcttg 60
 gcaaacgacg tcaatccagg cccactcatg gcggcgatcc aagcggattc cgccgcagacg 120
 ctggcagtc tgacgttacac ctatgttgc tgctggatac gtccggctgc gacgcataat 180
 gatccttaca ccacctggga gtggcgaag aacgcggacg gcagtgattt caccattgat 240
 ggctatttgt ggtcatcggt gagttacaaa aacatgttct ataccgatac tcagccccat 300
 accatcatgc agcgcgtgtc agagacgttg gggtaaccc acgataccgc tgacatcacc 360
 tatgccgcgg ccgatacccg tttctcgtac aaccacacca tctggagcaa cgatgtcgcc 420
 aacgcgcgcga gcaaaatcaa taaggtgatc gccttggtg acagcctgtc agacacgggc 480
 aacatttta acgcctcgca atggcgcttc ccgaacccga actcctgggt tgcggccac 540

ttctcaaaacg	ggttgtctg	gaccgaggat	ctggcgcaag	gttggggct	gcccctctac	600
aactggccg	tggcgccgc	ggcggggcgc	aatcaatact	ggcgctgac	tggcgtaat	660
gaacaggta	gttcgtacct	gacctacatg	gagatggcgc	cgaattaccg	tgcggagaac	720
acgctgtta	cactogaatt	cggctgaat	gatttatga	actacgaccg	ttcactggca	780
gacgtcaaag	cagattacag	ctcgccgtg	attcgctgg	tggaaagccgg	agcgaaaaat	840
atggtgcgt	tgacectacc	ggatgccacg	cgcgcgcgc	agttccaata	ttcaacgcaa	900
gaacacatcg	acgagggtgcg	cgcggaaagtg	attggcatga	acgcgttcat	tcgtgagcag	960
gcacgctact	tccagatgca	gggcataaac	atttcgctgt	ttgacgccta	cacgctgttt	1020
gatcagatga	tcgcccacc	agccgcgcac	ggcttgata	atgccagcgc	gccatgtctt	1080
gatattcagc	gcagctctgc	ggcggactat	ctctacacgc	atgctctggc	agccgagtgt	1140
gcctcatccg	gttcagaccg	ctttgtttc	tggatgtga	ctcacccaaac	cacggcaacg	1200
catcgctaca	tcgcccacca	cattctggct	accgggtttg	cgcagttccc	cggttaa	1257

<210> 62

<211> 418

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(21)

<400> 62

Met	Thr	Leu	Lys	Leu	Ser	Leu	Leu	Ile	Ala	Ser	Leu	Ser	Ala	Val	Ser
1				5				10						15	
Pro	Ala	Val	Leu	Ala	Asn	Asp	Val	Asn	Pro	Ala	Pro	Leu	Met	Ala	Pro
							20					25		30	
Ser	Glu	Ala	Asp	Ser	Ala	Gln	Thr	Leu	Gly	Ser	Leu	Thr	Tyr	Thr	Tyr
							35					40		45	
Val	Arg	Cys	Trp	Tyr	Arg	Pro	Ala	Ala	Thr	His	Asn	Asp	Pro	Tyr	Thr
							50					55		60	
Thr	Trp	Glu	Trp	Ala	Lys	Asn	Ala	Asp	Gly	Ser	Asp	Phe	Thr	Ile	Asp
							65					70		75	
Gly	Tyr	Trp	Trp	Ser	Ser	Val	Ser	Tyr	Lys	Asn	Met	Phe	Tyr	Thr	Asp
							85					90		95	
Thr	Gln	Pro	Asp	Thr	Ile	Met	Gln	Arg	Cys	Ala	Glu	Thr	Leu	Gly	Leu
							100					105		110	
Thr	His	Asp	Thr	Ala	Asp	Ile	Thr	Tyr	Ala	Ala	Asp	Thr	Arg	Phe	
							115					120		125	
Ser	Tyr	Asn	His	Thr	Ile	Trp	Ser	Asn	Asp	Val	Ala	Asn	Ala	Pro	Ser
							130					135		140	
Lys	Ile	Asn	Lys	Val	Ile	Ala	Phe	Gly	Asp	Ser	Leu	Ser	Asp	Thr	Gly
							145					150		155	
Asn	Ile	Phe	Asn	Ala	Ser	Gln	Trp	Arg	Phe	Pro	Asn	Pro	Asn	Ser	Trp
							165					170		175	
Phe	Val	Gly	His	Phe	Ser	Asn	Gly	Phe	Val	Trp	Thr	Glu	Tyr	Leu	Ala
							180					185		190	
Gln	Gly	Leu	Gly	Leu	Pro	Leu	Tyr	Asn	Trp	Ala	Val	Gly	Gly	Ala	Ala
							195					200		205	
Gly	Arg	Asn	Gln	Tyr	Trp	Ala	Leu	Thr	Gly	Val	Asn	Glu	Gln	Val	Ser
							210					215		220	
Ser	Tyr	Leu	Thr	Tyr	Met	Glu	Met	Ala	Pro	Asn	Tyr	Arg	Ala	Glu	Asn
							225					230		235	
Thr	Leu	Phe	Thr	Leu	Glu	Phe	Gly	Leu	Asn	Asp	Phe	Met	Asn	Tyr	Asp
							245					250		255	

Arg Ser Leu Ala Asp Val Lys Ala Asp Tyr Ser Ser Ala Leu Ile Arg
 260 265 270
 Leu Val Glu Ala Gly Ala Lys Asn Met Val Leu Leu Thr Leu Pro Asp
 275 280 285
 Ala Thr Arg Ala Pro Gln Phe Gln Tyr Ser Thr Gln Glu His Ile Asp
 290 295 300
 Glu Val Arg Ala Lys Val Ile Gly Met Asn Ala Phe Ile Arg Glu Gln
 305 310 315 320
 Ala Arg Tyr Phe Gln Met Gln Gly Ile Asn Ile Ser Leu Phe Asp Ala
 325 330 335
 Tyr Thr Leu Phe Asp Gln Met Ile Ala Asp Pro Ala Ala His Gly Phe
 340 345 350
 Asp Asn Ala Ser Ala Pro Cys Leu Asp Ile Gln Arg Ser Ser Ala Ala
 355 360 365
 Asp Tyr Leu Tyr Thr His Ala Leu Ala Ala Glu Cys Ala Ser Ser Gly
 370 375 380
 Ser Asp Arg Phe Val Phe Trp Asp Val Thr His Pro Thr Thr Ala Thr
 385 390 395 400
 His Arg Tyr Ile Ala Asp His Ile Leu Ala Thr Gly Val Ala Gln Phe
 405 410 415
 Pro Arg

<210> 63
 <211> 1242
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 63

atgaaaaata	cgttaatttt	ggctggctgt	atattggcag	ctccagccgt	cgcagatgac	60
ctaacaatca	cccctgaaac	tataagtgtg	cgctacgcgt	ctgagggtgca	gaacaaaacaa	120
acatacactt	atgttcgttg	ctggtatcgt	ccagcgcaga	accatgacga	cccttccact	180
gagtggaaat	gggctcgatg	cgacaatggc	gattactca	ctatcgatgg	gtactggtgg	240
tcgttgtct	ccttcaaaaa	catgttctat	accaatacccc	cgcaaacaga	aattgaaaac	300
cgctgtaaag	aaacactagg	ggtaatcat	gatagtgcgg	atcttcttta	ctatgcatca	360
gacaatcggt	tctcctacaa	ccatagtatt	tggacaaacg	acaacgcagt	aaacaacaaa	420
atcaatcgta	ttgtcgcat	cggtgatagc	ctgtctgaca	ccggtaatct	gtacaatgg	480
tcccaatggg	tattcccaa	ccgtaattct	tggtttctcg	gtcactttc	aaacggttt	540
gtgtggactg	aatacttagc	gcaaaacaaa	aacgtaccac	tgtacaactg	ggcggtcggt	600
ggcgccgccc	gcaccaacca	atacgtcgca	ttgacaggca	tttatgacca	agtgacgtct	660
tatcttacgt	acatgaagat	ggcaaagaac	tacaacccaa	acaacagttt	gatgacgctg	720
gaatttggcc	taaatgattt	catgaattac	ggccgagaag	tggcggacgt	gaaagctgac	780
ttaagttagcg	cattgatcg	cttgaccgaa	tcaggcgcaa	gcaacattct	actcttcacg	840
ttaccggacg	caacaaaggc	accgcagttt	aatattcga	ctcaggagga	aattgagacc	900
gttcgagcta	agattcttga	gttcaacact	tttattgaag	acaagcgtt	actcttatcaa	960
gctaaaggac	tgaatgtggc	cctctacgat	gctcatagca	tctttgatca	gctgacatcc	1020
aatcctaaac	aacacggttt	tgagaactca	acagatgcct	gtctgaacat	caaccgcagt	1080
tcctctgtcg	actaccttta	cagtcatgag	ctaactaacg	attgtgcgt	tcataagctct	1140
gataaaatatg	tgttctgggg	agtcactcac	ccaaccacag	caacacataa	atacattgcc	1200
gaccaaatac	ttcagaccaa	gctagaccag	ttcaatttct	aa		1242

<210> 64
 <211> 413
 <212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(18)

<400> 64

Met Lys Asn Thr Leu Ile Leu Ala Gly Cys Ile Leu Ala Ala Pro Ala
1 5 10 15
Val Ala Asp Asp Leu Thr Ile Thr Pro Glu Thr Ile Ser Val Arg Tyr
20 25 30
Ala Ser Glu Val Gln Asn Lys Gln Thr Tyr Thr Val Arg Cys Trp
35 40 45
Tyr Arg Pro Ala Gln Asn His Asp Asp Pro Ser Thr Glu Trp Glu Trp
50 55 60
Ala Arg Asp Asp Asn Gly Asp Tyr Phe Thr Ile Asp Gly Tyr Trp Trp
65 70 75 80
Ser Ser Val Ser Phe Lys Asn Met Phe Tyr Thr Asn Thr Pro Gln Thr
85 90 95
Glu Ile Glu Asn Arg Cys Lys Glu Thr Leu Gly Val Asn His Asp Ser
100 105 110
Ala Asp Leu Leu Tyr Tyr Ala Ser Asp Asn Arg Phe Ser Tyr Asn His
115 120 125
Ser Ile Trp Thr Asn Asp Asn Ala Val Asn Asn Lys Ile Asn Arg Ile
130 135 140
Val Ala Phe Gly Asp Ser Leu Ser Asp Thr Gly Asn Leu Tyr Asn Gly
145 150 155 160
Ser Gln Trp Val Phe Pro Asn Arg Asn Ser Trp Phe Leu Gly His Phe
165 170 175
Ser Asn Gly Leu Val Trp Thr Glu Tyr Leu Ala Gln Asn Lys Asn Val
180 185 190
Pro Leu Tyr Asn Trp Ala Val Gly Ala Ala Gly Thr Asn Gln Tyr
195 200 205
Val Ala Leu Thr Gly Ile Tyr Asp Gln Val Thr Ser Tyr Leu Thr Tyr
210 215 220
Met Lys Met Ala Lys Asn Tyr Asn Pro Asn Asn Ser Leu Met Thr Leu
225 230 235 240
Glu Phe Gly Leu Asn Asp Phe Met Asn Tyr Gly Arg Glu Val Ala Asp
245 250 255
Val Lys Ala Asp Leu Ser Ser Ala Leu Ile Arg Leu Thr Glu Ser Gly
260 265 270
Ala Ser Asn Ile Leu Leu Phe Thr Leu Pro Asp Ala Thr Lys Ala Pro
275 280 285
Gln Phe Lys Tyr Ser Thr Gln Glu Glu Ile Glu Thr Val Arg Ala Lys
290 295 300
Ile Leu Glu Phe Asn Thr Phe Ile Glu Glu Gln Ala Leu Leu Tyr Gln
305 310 315 320
Ala Lys Gly Leu Asn Val Ala Leu Tyr Asp Ala His Ser Ile Phe Asp
325 330 335
Gln Leu Thr Ser Asn Pro Lys Gln His Gly Phe Glu Asn Ser Thr Asp
340 345 350
Ala Cys Leu Asn Ile Asn Arg Ser Ser Ser Val Asp Tyr Leu Tyr Ser
355 360 365
His Glu Leu Thr Asn Asp Cys Ala Tyr His Ser Ser Asp Lys Tyr Val
370 375 380

Phe Trp Gly Val Thr His Pro Thr Thr Ala Thr His Lys Tyr Ile Ala
 385 390 395 400
 Asp Gln Ile Ile Gln Thr Lys Leu Asp Gln Phe Asn Phe
 405 410

<210> 65
<211> 1164
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 65

atgaaccctt	ttcttgaaaa	tcctccggtc	ccaagaaaaat	cctcgccctgc	60
gatggcggag	gtatTTggg	tttgatgagc	gttgaatcc	tagcaaaaat	120
ttacgcacta	agtttagttaa	agaccagaac	ttcgtgcctcg	cggatttattt	180
tgcggcacca	gcaccggcgc	gattatcgct	gcctgttattt	ctagtggcat	240
aaaatacggcc	aattctatct	cgacagtggg	aagcaaatgt	tcgataaggc	300
aagcgcttgc	aatacagtta	tgacgatgag	ccattggcga	ggcagttgcg	360
gatgagcaac	tgaaggaaac	cgatgccaag	ctgggtatgt	tcgacccctaa	420
atgatggtga	tgcgtAACCA	cagcaccgac	tcaccttggc	cggtttccaa	480
gcaaaataca	ataatatcgc	ccgaaaggat	tgcaacctca	atccgcctt	540
gtccgtgcca	gcaccggccgc	tccgacgtat	ttcccaccgg	aagtcatcac	600
ggcacacccg	aagaatacaa	tttcatcttc	gtcgacggtg	gcgtgaccac	660
ccagcatatc	ttgctttcct	aatggccact	gccaaggcctt	atgcctcaat	720
ggcagcaacc	agttattgtat	cgtttccgta	ggcacccgaa	gtgccgccaa	780
aatctggacg	tggtatgatat	gaacctgatc	cattttgcca	aaaacatccc	840
atgaatgccc	catctgcccc	ttggatatgt	acctgcccgg	tattgggtga	900
ggtggcatgt	tagatcgaaa	gtttggtgac	atggtgatgc	ccgcgtcaag	960
tttaccggcc	ctaagctttt	tacttatatg	cgttatgatc	ccatgtttc	1020
ttgaagacta	tcggtatatac	agatatcgat	ccagccaaaa	tgcagcaaat	1080
aataatattc	cagatataaca	acggtaggt	atcgaatatg	ccaaacgcca	1140
gctcattttg	aggggtttaa	ataaa			1164

<210> 66
<211> 387
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 66

Met Asn Pro Phe Leu Glu Asp Lys Ile Lys Ser Ser Gly Pro Lys Lys					
1	5	10	15		
Ile Leu Ala Cys Asp Gly Gly Ile Leu Gly Leu Met Ser Val Glu					
20	25	30			
Ile Leu Ala Lys Ile Glu Ala Asp Leu Arg Thr Lys Leu Gly Lys Asp					
35	40	45			
Gln Asn Phe Val Leu Ala Asp Tyr Phe Asp Phe Val Cys Gly Thr Ser					
50	55	60			
Thr Gly Ala Ile Ile Ala Ala Cys Ile Ser Ser Gly Met Ser Met Ala					
65	70	75	80		
Lys Ile Arg Gln Phe Tyr Leu Asp Ser Gly Lys Gln Met Phe Asp Lys					
85	90	95			
Ala Ser Leu Leu Lys Arg Leu Gln Tyr Ser Tyr Asp Asp Glu Pro Leu					

100	105	110
Ala Arg Gln Leu Arg Ala Ala Phe Asp Glu Gln Leu Lys	Glu Thr Asp	
115	120	125
Ala Lys Leu Gly Ser Ala His Leu Lys Thr Leu Leu Met	Met Val Met	
130	135	140
Arg Asn His Ser-Thr Asp Ser Pro Trp Pro Val Ser Asn Asn	Pro Tyr	
145	150	155
160		
Ala Lys Tyr Asn Asn Ile Ala Arg Lys Asp Cys Asn Leu Asn	Leu Pro	
165	170	175
Leu Trp Gln Leu Val Arg Ala Ser Thr Ala Ala Pro Thr	Tyr Phe Pro	
180	185	190
Pro Glu Val Ile Thr Phe Ala Asp Gly Thr Pro Glu Glu	Tyr Asn Phe	
195	200	205
Ile Phe Val Asp Gly Gly Val Thr Thr Tyr Asn Asn Pro	Ala Tyr Leu	
210	215	220
Ala Phe Leu Met Ala Thr Ala Lys Pro Tyr Ala Leu Asn	Trp Pro Thr	
225	230	235
240		
Gly Ser Asn Gln Leu Leu Ile Val Ser Val Gly Thr Gly	Ser Ala Ala	
245	250	255
Asn Val Arg Pro Asn Leu Asp Val Asp Asp Met Asn Leu	Ile His Phe	
260	265	270
Ala Lys Asn Ile Pro Ser Ala Leu Met Asn Ala Ala Ser	Ala Gly Trp	
275	280	285
Asp Met Thr Cys Arg Val Leu Gly Glu Cys Arg His	Gly Gly Met Leu	
290	295	300
Asp Arg Glu Phe Gly Asp Met Val Met Pro Ala Ser Arg	Asp Leu Asn	
305	310	315
320		
Phe Thr Gly Pro Lys Leu Phe Thr Tyr Met Arg Tyr Asp	Pro Asp Val	
325	330	335
Ser Phe Glu Gly Leu Lys Thr Ile Gly Ile Ser Asp Ile	Asp Pro Ala	
340	345	350
Lys Met Gln Gln Met Asp Ser Val Asn Asn Ile Pro Asp	Ile Gln Arg	
355	360	365
Val Gly Ile Glu Tyr Ala Lys Arg His Val Asp Thr	Ala His Phe Glu	
370	375	380
Gly Phe Lys		
385		

<210> 67

<211> 1419

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 67

atggcattg tcttcgtcca cggatggagc gtgcgcaca ccaacacgta cggcagctg	60
cccttgcgtc tcaagaagag cttcaaagcc gccggaaaac agattcaggc cgagaacatc	120
tacctggcg agtacgttag ctggacgac cagtaaacag tcgacgacat cgcccgccca	180
ttcgattgcg cactgcggga aaaactatac gatccggcga cgaagcagtgc gacgaaatgttc	240
gcctgcata ctcattccac cggggccccg gtcgcgcgt tggatggatgttctactac	300
ggcgccgcca gactggccga gtggccgatg tcccacctcg tgatgctcg cccggccaaat	360
catggctcg cccttgccca gctcggcaag agccgcctca gcccgcataa gagcttcttc	420
gagggtgtcg aaccggccca gcgcgtcctc gactggctcg aactcggcag tgagctgagt	480
tggccctca acacgagatg gctcgactac gactgcgcgc cccggccctg ctgggtcttc	540
accctcaccg gccagcgcata cgaccggagt ttgtacgacc atctcaacag ctataccgggt	600

gagcaggggat	cggatggcg	cgtgcgcgtc	gccgcggcca	acatgaacac	caagctgctg	660
acctttaaac	agaaggggcg	caagctcg	tgcacaggcc	agaagaagac	cgccgacacc	720
ggccttggcg	tcgtgccgg	ccggcgcac	tccggcccg	acatgggc	catcgccagc	780
gtgcgcggca	ccggcgacca	tcccaccctg	aatgggtga	ctcggtgc	ggccgtcacc	840
gacgtcaaca	cgtacgatgc	cgtctgtaa	gatctggac	ctctcaccgc	ccagacccag	900
aaggatgaaa	aggtgaaaga	ggtcaaaggc	ctgctgcg	cggtcagata	ccagacggac	960
cgctacgtca	tgctcg	ccgcctgaag	aacgaccgc	gcgactac	ctccgattac	1020
gatctcctgc	tcaccgccc	acccaactac	tcgccc	acccgtca	aggcttctc	1080
gtcgaccgc	aacgaaacca	gccaacccg	ggcaagctca	cttactac	gaactacgac	1140
gccatggcca	aattgaaagg	taagaccgc	gagggcgtc	tggcttcaa	gatcctggcg	1200
cgccgggtga	aaggcggc	cgtctactat	gaggttgc	agttccagtc	cgacgtggc	1260
ggcgtcagca	gcatgctgca	gcccaacgc	acagtatga	tcgacatcac	cctcaatcgc	1320
aacgtcgacg	cgcgcgtt	ccgggtcacc	gagaatctgc	ccacgggtga	ccagggcag	1380
gaaatcagcg	gcgtccc	ggggcagaac	gtcccgtag			1419

<210> 68

<211> 472

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 68

Met	Val	Ile	Val	Phe	Val	His	Gly	Trp	Ser	Val	Arg	Asn	Thr	Asn	Thr
1				5					10			15			
Tyr	Gly	Gln	Leu	Pro	Leu	Arg	Leu	Lys	Lys	Ser	Phe	Lys	Ala	Ala	Gly
					20			25				30			
Lys	Gln	Ile	Gln	Val	Glu	Asn	Ile	Tyr	Leu	Gly	Glu	Tyr	Val	Ser	Phe
					35			40			45				
Asp	Asp	Gln	Val	Thr	Val	Asp	Asp	Ile	Ala	Arg	Ala	Phe	Asp	Cys	Ala
					50			55			60				
Leu	Arg	Glu	Lys	Leu	Tyr	Asp	Pro	Ala	Thr	Lys	Gln	Trp	Thr	Lys	Phe
					65			70		75			80		
Ala	Cys	Ile	Thr	His	Ser	Thr	Gly	Gly	Pro	Val	Ala	Arg	Leu	Trp	Met
					85			90			95				
Asp	Leu	Tyr	Tyr	Gly	Ala	Ala	Arg	Leu	Ala	Glu	Cys	Pro	Met	Ser	His
					100			105			110				
Leu	Val	Met	Leu	Ala	Pro	Ala	Asn	His	Gly	Ser	Ala	Leu	Ala	Gln	Leu
					115			120			125				
Gly	Lys	Ser	Arg	Leu	Ser	Arg	Ile	Lys	Ser	Phe	Phe	Glu	Gly	Val	Glu
					130			135			140				
Pro	Gly	Gln	Arg	Val	Leu	Asp	Trp	Leu	Glu	Leu	Gly	Ser	Glu	Leu	Ser
					145			150		155			160		
Trp	Ala	Leu	Asn	Thr	Arg	Trp	Leu	Asp	Tyr	Asp	Cys	Arg	Ala	Ala	Ala
					165			170			175				
Cys	Trp	Val	Phe	Thr	Leu	Thr	Gly	Gln	Arg	Ile	Asp	Arg	Ser	Leu	Tyr
					180			185			190				
Asp	His	Leu	Asn	Ser	Tyr	Thr	Gly	Glu	Gln	Gly	Ser	Asp	Gly	Val	Val
					195			200			205				
Arg	Val	Ala	Ala	Ala	Asn	Met	Asn	Thr	Lys	Leu	Leu	Thr	Phe	Glu	Gln
					210			215			220				
Lys	Gly	Arg	Lys	Leu	Val	Phe	Thr	Gly	Gln	Lys	Lys	Thr	Ala	Asp	Thr
					225			230		235			240		
Gly	Leu	Gly	Val	Val	Pro	Gly	Arg	Ser	His	Ser	Gly	Arg	Asp	Met	Gly
					245			250			255				
Ile	Ile	Ala	Ser	Val	Arg	Gly	Thr	Gly	Asp	His	Pro	Thr	Leu	Glu	Trp

260	265	270	
Val Thr Arg Cys Leu Ala Val	Thr Asp Val Asn Thr Tyr Asp Ala Val		
275	280	285	
Cys Lys Asp Leu Asp Ala Leu	Thr Ala Gln Thr Gln Lys Asp Glu Lys		
290	295	300	
Val Glu Glu Val-Lys Gly Leu	Leu Arg Thr Val Arg Tyr Gln Thr Asp		
305	310	315	320
Arg Tyr Val Met Leu Val Phe Arg Leu	Lys Asn Asp Arg Gly Asp Tyr		
325	330	335	
Leu Ser Asp Tyr Asp Leu Leu Leu	Thr Ala Gly Pro Asn Tyr Ser Pro		
340	345	350	
Asp Asp Leu Pro Glu Gly Phe Phe	Val Asp Arg Gln Arg Asn Gln Arg		
355	360	365	
Asn Pro Gly Lys Leu Thr Tyr Tyr	Leu Asn Tyr Asp Ala Met Ala Lys		
370	375	380	
Leu Lys Gly Lys Thr Ala Glu Gly Arg Leu	Gly Phe Lys Ile Leu Ala		
385	390	395	400
Arg Pro Val Lys Gly Gly Leu Val Tyr Tyr	Glu Val Ala Glu Phe Gln		
405	410	415	
Ser Asp Val Gly Gly Val Ser Ser Met	Leu Gln Pro Asn Ala Thr Val		
420	425	430	
Met Ile Asp Ile Thr Leu Asn Arg Asn Val	Asp Ala Arg Val Phe Arg		
435	440	445	
Phe Thr Glu Asn Leu Pro Thr Gly Asp Gln	Gly Glu Glu Ile Ser Gly		
450	455	460	
Val Pro Leu Gly Gln Asn Val Pro			
465	470		

<210> 69
<211> 1038
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<210> 70

<211> 345

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 70

Met Thr Thr Gln Phe Arg Asn Leu Ile Phe Glu Gly Gly Val Lys
1 5 10 15
Gly Val Ala Tyr Ile Gly Ala Met Gln Ile Leu Glu Asn Arg Gly Val
20 25 30
Leu Gln Asp Ile Arg Arg Val Gly Gly Cys Ser Ala Gly Ala Ile Asn
35 40 45
Ala Leu Ile Phe Ala Leu Gly Tyr Thr Val Arg Glu Gin Lys Glu Ile
50 55 60
Leu Gln Ala Thr Asp Phe Asn Gln Phe Met Asp Asn Ser Trp Gly Val
65 70 75 80
Ile Arg Asp Ile Arg Arg Leu Ala Arg Asp Phe Gly Trp His Lys Gly
85 90 95
Asp Phe Phe Asn Ser Trp Ile Gly Asp Leu Ile His Arg Arg Leu Gly
100 105 110
Asn Arg Arg Ala Thr Phe Lys Asp Leu Gln Lys Ala Lys Leu Pro Asp
115 120 125
Leu Tyr Val Ile Gly Thr Asn Leu Ser Thr Gly Tyr Ala Glu Val Phe
130 135 140
Ser Ala Glu Arg His Pro Asp Met Glu Leu Ala Thr Ala Val Arg Ile
145 150 155 160
Ser Met Ser Ile Pro Leu Phe Phe Ala Ala Val Arg His Gly Asp Arg
165 170 175
Gln Asp Val Tyr Val Asp Gly Gly Val Gln Leu Asn Tyr Pro Ile Lys
180 185 190
Leu Phe Asp Arg Glu Arg Tyr Ile Asp Leu Ala Lys Asp Pro Gly Ala
195 200 205
Val Arg Arg Thr Gly Tyr Tyr Asn Lys Glu Asn Ala Arg Phe Gln Leu
210 215 220
Glu Arg Pro Gly Tyr Ser Pro Tyr Val Tyr Asn Arg Gln Thr Leu Gly
225 230 235 240
Leu Arg Leu Asp Ser Arg Glu Glu Ile Gly Leu Phe Arg Tyr Asp Glu
245 250 255
Pro Leu Lys Gly Lys Pro Ile Lys Ser Phe Thr Asp Tyr Ala Arg Gln
260 265 270
Leu Phe Gly Ala Leu Met Asn Ala Gln Glu Lys Ile His Leu His Gly
275 280 285
Asp Asp Trp Gln Arg Thr Val Tyr Ile Asp Thr Leu Asp Val Gly Thr
290 295 300
Thr Asp Phe Asn Leu Ser Asp Ala Thr Lys Gln Ala Leu Ile Glu Gln
305 310 315 320
Gly Ile Asn Gly Thr Glu Asn Tyr Phe Glu Trp Phe Asp Asn Pro Leu
325 330 335
Glu Lys Pro Val Asn Arg Val Glu Ser
340 345

<210> 71

<211> 3264

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 71

atgtcgctat	catcaccgccc	cgaaacccccc	gaaccccccgg	aaccccccgtc	accggcgcg	60
cgatcgctcc	ggggaggatg	gagccgcccgg	gtggccggcc	tgctggccct	ggtgctgctc	120
accgggctcc	tccagatcg	cgtggcgctc	gcacggcccg	ccggggcgcc	cgtacacgag	180
cccgcgatga	cgtggAACCT	gcatggggcc	aagaagacccg	cggaactgg	tcccgatctg	240
atgcgttaacc	ataacgtcac	cgtcgccggcc	ctccaggaag	tggccaacgg	caacttcctg	300
ggcctaactc	ccacagagca	cgacgtgccc	tacctaaggc	cggacggcac	gacctcgact	360
ccgcccggatc	cgcagaaaatg	gcgggtcgag	aagtacaacc	tcgccaagga	cgtaccaacc	420
gttttctgt	tccggaccgg	ctccaaacaac	cgcgggctcg	cgatcgctac	cacccaggac	480
gtcggcgatg	tctcgagaa	tgtacacgtc	gtcaatgtga	ccgaggattg	ggaaggcaag	540
atgttccccg	ccctgggggt	gaagatcgac	gggccttgtt	actactccat	ccacgcctcc	600
accacgcccga	agcgcgcgaa	caacaacgcc	ggcactctgg	tcgaggacct	ctccaagctg	660
cacgagacgg	ccgcttcga	aggcgactgg	gcccgcgttgg	gcgacttgaa	ccggtacccc	720
tccgaggact	cgaacgccta	cgagaaccaa	cggaagcatac	tcaaaggcgc	catgcccaca	780
aactttccgg	ataatcaggc	ggcgttgcgc	gaagtcctgg	agttcgagtc	cgacgaacgc	840
gtcatctggc	agggtgcgag	gaccacgcac	cacggcgcccg	agctcgacta	catgggtggcc	900
aaggagccg	gtaacgacta	caaggccagc	cgatcgacgt	cgaagcacgg	ctccgatcac	960
tacccgggt	tcttcggtat	tggggacgat	tcggacacct	gcatggccgg	cacggcgccg	1020
gtggccggcg	acgcgcgcgc	tgcggccgc	accgagttct	gtccccctgg	cgacgatctg	1080
ccggccgtca	tcgtctcgat	gggggacagc	tatatctccg	gcgagggagg	gcgctggcag	1140
ggcaacgcca	acaccccttc	cgggggcgac	tcctggggca	ccgaccgggc	cgccgacggc	1200
acggaggctt	acgagaagaa	ctccgaaggc	agcgatgcct	gtcaccgcctc	cgacgtcg	1260
gagatcaagc	gcgcgcacatc	cgccgacatc	ccggcggaaac	gcaggatcaa	catgcctgc	1320
tcggggcgccg	agaccaagca	cctgctcacc	gagacettca	aggtgaaaaa	gccccagatc	1380
gagcagctcg	ccgacgtcgc	cggaaacccac	cgggtggaca	cgatcggtt	ctccatcg	1440
ggcaacgacc	tcgagttcgc	cgacatcg	agccagtg	ccacggcctt	catgctcg	1500
gaaggcgcgt	gtcacacgga	cgtcgacgt	acccttgata	gcccgttggg	cgatgtgagc	1560
agatccgtt	ccgagggttct	ggccgcacatc	cgcgacacca	tgatcgaggc	cgggcaggac	1620
gataccagct	acaagctcg	tctccagttcc	taccctgccc	cgttgc	gtcggatgag	1680
atgcgttaca	cgggcgatca	ctacgaccgg	tacaccgagg	gcccgttccc	tttctatgac	1740
gtcgacctgg	actggacgcg	cgaegtcc	atcaaaaaga	tcaagccac	gctgcgcggg	1800
gtggccaaga	gtgcggatgc	ggcccttc	aacctgacgg	acacgttac	ggggcacgag	1860
ctgtgtcg	agcacacccg	acaggcggag	tccggcaat	cgttgcgaa	tccaaatactg	1920
gaacacgagg	ccgagtgggt	gcttcgt	ccaggttca	ccacggcggg	tgacacggcc	1980
gaagccatcc	atccgaatgc	gttcggccag	cacccctca	gtagctgcct	cagccaggcc	2040
gtccggacga	tggacgat	ggaccagagg	tacttcg	gcacggggcg	ggacacccg	2100
aatccccggcc	tcgtgtggcc	acgcagttcg	ccatcgac	ccgtcg	gaccggcgg	2160
ggttggcagg	gogacgactt	ccggctcg	gaccactaca	tgttccagcg	cgccgtctac	2220
gcccgttca	acccggacgc	ggaccggagc	ggcgcgatcg	atccggggcc	aatcacctt	2280
ggccaaacccg	acggatgg	cggtaggt	aaggacactt	cgaactggcc	gacccgtg	2340
ggaacccact	tcgtcgacgg	catcgac	gcccggagg	cacgcacca	cacccgttac	2400
cagctgtcg	tgttccacag	ccgggtt	gacaaccat	acgttgcggg	cgagatggcg	2460
ccgggcacca	ctgacgacca	gctcg	ggccccgtc	ccatcac	gacttgc	2520
ctcttccagg	acacccctt	cgaatggggc	gtggatgc	ccgggggg	ccagctg	2580
cggggcgatgg	tcttcaggca	cggctatgt	gggctgg	gttgc	cgacgtctc	2640
agcgacgaat	ggctcg	accgacgtt	atcggtt	cgattccgg	gcttggagg	2700
accccgtcg	agacagggg	ggacgcgg	atcg	accgc	accgcaacc	2760
tgggtcgacc	tgatcg	tacg	gtgacgt	ttgtgg	gacgatct	2820
tcgaagagca	cgtacat	gac	gagat	ggact	ggactggcc	2880
ggcagcatct	tcgactgg	ccgg	gac	ggact	ggactggcc	2940
accggcgccg	gcatcc	gacatgg	ccgt	ggact	ggactggcc	3000
tcgggctcg	acgagc	ggag	ccgt	ggact	ggactggcc	3060
ccgtactcg	agg	gtac	ccgt	ggact	ggactggcc	3120

aggcgggtca tcggctactt caccggctgg cgccacccgtg agaacgacca gcccgcgtac	3180
ctgggccga acatcccggtg gtcgaaggtg acccacatca actacgcgtt cgcgaaagtc	3240
gacgacgaca acaagatcca aaga	3264

<210> 72
<211> 1088
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 72
Met Ser Leu Ser Ser Pro Pro Glu Thr Pro Glu Pro Pro Glu Pro Pro
1 5 10 15
Ser Pro Gly Ala Arg Ser Leu Arg Gly Gly Trp Ser Arg Arg Val Ala
20 25 30
Gly Leu Leu Ala Leu Val Leu Leu Thr Gly Leu Leu Gln Ile Val Val
35 40 45
Pro Leu Ala Arg Pro Ala Ala Ala Val Gln Gln Pro Ala Met Thr
50 55 60
Trp Asn Leu His Gly Ala Lys Lys Thr Ala Glu Leu Val Pro Asp Leu
65 70 75 80
Met Arg Asn His Asn Val Thr Val Ala Ala Leu Gln Glu Val Ala Asn
85 90 95
Gly Asn Phe Leu Gly Leu Thr Pro Thr Glu His Asp Val Pro Tyr Leu
100 105 110
Lys Pro Asp Gly Thr Thr Ser Thr Pro Pro Asp Pro Gln Lys Trp Arg
115 120 125
Val Glu Lys Tyr Asn Leu Ala Lys Asp Asp Ala Thr Ala Phe Val Ile
130 135 140
Arg Thr Gly Ser Asn Asn Arg Gly Leu Ala Ile Val Thr Thr Gln Asp
145 150 155 160
Val Gly Asp Val Ser Gln Asn Val His Val Val Asn Val Thr Glu Asp
165 170 175
Trp Glu Gly Lys Met Phe Pro Ala Leu Gly Val Lys Ile Asp Gly Ala
180 185 190
Trp Tyr Tyr Ser Ile His Ala Ser Thr Thr Pro Lys Arg Ala Asn Asn
195 200 205
Asn Ala Gly Thr Leu Val Glu Asp Leu Ser Lys Leu His Glu Thr Ala
210 215 220
Ala Phe Glu Gly Asp Trp Ala Ala Met Gly Asp Trp Asn Arg Tyr Pro
225 230 235 240
Ser Glu Asp Ser Asn Ala Tyr Glu Asn Gln Arg Lys His Leu Lys Gly
245 250 255
Ala Met Arg Thr Asn Phe Pro Asp Asn Gln Ala Ala Leu Arg Glu Val
260 265 270
Leu Glu Phe Glu Ser Asp Glu Arg Val Ile Trp Gln Gly Ala Arg Thr
275 280 285
His Asp His Gly Ala Glu Leu Asp Tyr Met Val Ala Lys Gly Ala Gly
290 295 300
Asn Asp Tyr Lys Ala Ser Arg Ser Thr Ser Lys His Gly Ser Asp His
305 310 315 320
Tyr Pro Val Phe Phe Gly Ile Gly Asp Asp Ser Asp Thr Cys Met Gly
325 330 335
Gly Thr Ala Pro Val Ala Ala Asn Ala Pro Arg Ala Ala Ala Thr Glu
340 345 350

Ser Cys Pro Leu Asp Asp Asp Leu Pro Ala Val Ile Val Ser Met Gly
 355 360 365
 Asp Ser Tyr Ile Ser Gly Glu Gly Gly Arg Trp Gln Gly Asn Ala Asn
 370 375 380
 Thr Ser Ser Gly Gly Asp Ser Trp Gly Thr Asp Arg Ala Ala Asp Gly
 385 390 395 400
 Thr Glu Val Tyr Glu Lys Asn Ser Glu Gly Ser Asp Ala Cys His Arg
 405 410 415
 Ser Asp Val Ala Glu Ile Lys Arg Ala Asp Ile Ala Asp Ile Pro Ala
 420 425 430
 Glu Arg Arg Ile Asn Ile Ala Cys Ser Gly Ala Glu Thr Lys His Leu
 435 440 445
 Leu Thr Glu Thr Phe Lys Gly Glu Lys Pro Gln Ile Glu Gln Leu Ala
 450 455 460
 Asp Val Ala Glu Thr His Arg Val Asp Thr Ile Val Val Ser Ile Gly
 465 470 475 480
 Gly Asn Asp Leu Glu Phe Ala Asp Ile Val Ser Gln Cys Ala Thr Ala
 485 490 495
 Phe Met Leu Gly Glu Gly Ala Cys His Thr Asp Val Asp Asp Thr Leu
 500 505 510
 Asp Ser Arg Leu Gly Asp Val Ser Arg Ser Val Ser Glu Val Leu Ala
 515 520 525
 Ala Ile Arg Asp Thr Met Ile Glu Ala Gly Gln Asp Asp Thr Ser Tyr
 530 535 540
 Lys Leu Val Leu Gln Ser Tyr Pro Ala Pro Leu Pro Ala Ser Asp Glu
 545 550 555 560
 Met Arg Tyr Thr Gly Asp His Tyr Asp Arg Tyr Thr Glu Gly Gly Cys
 565 570 575
 Pro Phe Tyr Asp Val Asp Leu Asp Trp Thr Arg Asp Val Leu Ile Lys
 580 585 590
 Lys Ile Glu Ala Thr Leu Arg Gly Val Ala Lys Ser Ala Asp Ala Ala
 595 600 605
 Phe Leu Asn Leu Thr Asp Thr Phe Thr Gly His Glu Leu Cys Ser Lys
 610 615 620
 His Thr Arg Gln Ala Glu Ser Gly Glu Ser Leu Ala Asn Pro Ile Leu
 625 630 635 640
 Glu His Glu Ala Glu Trp Val Arg Phe Val Pro Gly Leu Thr Thr Pro
 645 650 655
 Gly Asp Thr Ala Glu Ala Ile His Pro Asn Ala Phe Gly Gln His Ala
 660 665 670
 Leu Ser Ser Cys Leu Ser Gln Ala Val Arg Thr Met Asp Asp Ser Asp
 675 680 685
 Gln Arg Tyr Phe Glu Cys Asp Gly Arg Asp Thr Gly Asn Pro Arg Leu
 690 695 700
 Val Trp Pro Arg Ser Ser Pro Ile Asp Ala Val Val Glu Thr Ala Asp
 705 710 715 720
 Gly Trp Gln Gly Asp Asp Phe Arg Leu Ala Asp His Tyr Met Phe Gln
 725 730 735
 Arg Gly Val Tyr Ala Arg Phe Asn Pro Asp Ala Asp Arg Ser Gly Ala
 740 745 750
 Ile Asp Pro Gly Arg Ile Thr Phe Gly Gln Thr Asp Gly Trp Leu Gly
 755 760 765
 Glu Val Lys Asp Thr Ser Asn Trp Pro Ser Leu Ser Gly Thr Asp Phe
 770 775 780
 Val Asp Gly Ile Asp Ala Ala Glu Ala Arg Thr Ser Thr Gly His
 785 790 795 800
 Gln Leu Leu Leu Phe His Ser Gly Val Glu Asp Asn Gln Tyr Val Arg

805	810	815
Val Glu Met Ala Pro Gly Thr Thr Asp Asp Gln Leu Val Arg Gly Pro		
820	825	830
Val Pro Ile Thr Arg Tyr Trp Pro Leu Phe Gln Asp Thr Pro Phe Glu		
835	840	845
Trp Gly Val Asp Ala Ala Gly Asp Gln Leu Asn Arg Ala Met Val		
850	855	860
Phe Arg His Gly Tyr Val Gly Leu Val Gln Val Ser Leu Asp Ala Leu		
865	870	880
Ser Asp Glu Trp Leu Val Glu Pro Thr Leu Ile Gly Ser Ala Ile Pro		
885	890	895
Ala Leu Glu Gly Thr Pro Phe Glu Thr Gly Val Asp Ala Ala Ile Val		
900	905	910
Arg His Gln Gln Pro Thr Ala Met Trp Val Asp Leu Ile Ser Gly Thr		
915	920	925
Gln Val Val Thr Leu Leu Val Asp Leu Asp Asp Leu Ser Lys Ser Thr		
930	935	940
Tyr Met Thr Ser Ile Val Glu Ile Thr Thr Met Trp Pro Ser Leu Arg		
945	950	960
Gly Ser Ile Phe Asp Trp Thr Gly Gly Glu Ala Trp Lys Pro Glu Lys		
965	970	975
Met Gln Ile Lys Thr Gly Ala Gly Asp Pro Tyr Asp Met Asp Ala Asp		
980	985	990
Asp Arg Gln Ala Lys Pro Ala Val Ser Gly Ser His Glu Gln Cys Arg		
995	1000	1005
Pro Glu Gly Leu Ala Gln Thr Pro Gly Val Asn Thr Pro Tyr Cys Glu		
1010	1015	1020
Val Tyr Asp Thr Asp Gly Arg Glu Trp Leu Gly Gly Asn Gly His Asp		
1025	1030	1035
Arg Arg Val Ile Gly Tyr Phe Thr Gly Trp Arg Thr Gly Glu Asn Asp		
1045	1050	1055
Gln Pro Arg Tyr Leu Val Pro Asn Ile Pro Trp Ser Lys Val Thr His		
1060	1065	1070
Ile Asn Tyr Ala Phe Ala Lys Val Asp Asp Asp Asn Lys Ile Gln Arg		
1075	1080	1085

<210> 73

<211> 753

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 73

atgggaaacg gtgcagcagt tggttccaat gataatggta gagaagaaaag tgtttacgta	60
ctttctgtga tcgcctgtaa tggtttattat ttacagaagt gtgaagggtgg ggcatcgct	120
gatacggtga tttagaaaaat taatagccaa actcaacctt taggatatga gatttagca	180
gatttcatttc gtgatggtca tattggttct tttgcctgtaa agatggcagt ctttagaaat	240
aatggtaatg gcaatttgtt ttttagcgatc aaagggacag atatgaataa tatcaatgac	300
ttgggtgaatg atctaaccat gatatttaga ggcattggtt ctgttgctgc aatccaacca	360
acgattaaca tggcacaaga actcatcgac caatatggag tgaatttgat tactggtcac	420
tcccttggag gctacatgac tggaaatcattc gctaccatc gtggactacc aggtattgca	480
tttgcgcac caggttcaaa tggtccattt gtaaaattag gtggacaaga gacacctggc	540
tttcacaatg ttaacttta acatgatcca gcaggttaacg ttatgactgg ggtttatact	600
catgtccaat ggagtattt tggatgtt gatggatga ctcatggtat tgaaaatatg	660
gtgaatttattt taaaagataa aagagattt accaatcgca atttcaagg aagaagtcaa	720

753

agtctataata cgggttattta ttacccaaaa taa

<210> 74

<211> 250

<212> PRT

<213> Unknown -

<220>

<223> Obtained from an environmental sample.

<400> 74

Met	Gly	Asn	Gly	Ala	Ala	Val	Gly	Ser	Asn	Asp	Asn	Gly	Arg	Glu	Glu
1															
														15	
Ser	Val	Tyr	Val	Leu	Ser	Val	Ile	Ala	Cys	Asn	Val	Tyr	Tyr	Leu	Gln
20															30
Lys	Cys	Glu	Gly	Gly	Ala	Ser	Arg	Asp	Ser	Val	Ile	Arg	Glu	Ile	Asn
35															45
Ser	Gln	Thr	Gln	Pro	Leu	Gly	Tyr	Glu	Ile	Val	Ala	Asp	Ser	Ile	Arg
50															60
Asp	Gly	His	Ile	Gly	Ser	Phe	Ala	Cys	Lys	Met	Ala	Val	Phe	Arg	Asn
65															80
Asn	Gly	Asn	Gly	Asn	Cys	Val	Leu	Ala	Ile	Lys	Gly	Thr	Asp	Met	Asn
85															95
Asn	Ile	Asn	Asp	Leu	Val	Asn	Asp	Leu	Thr	Met	Ile	Leu	Gly	Gly	Ile
100															110
Gly	Ser	Val	Ala	Ala	Ile	Gln	Pro	Thr	Ile	Asn	Met	Ala	Gln	Glu	Leu
115															125
Ile	Asp	Gln	Tyr	Gly	Val	Asn	Leu	Ile	Thr	Gly	His	Ser	Leu	Gly	Gly
130															140
Tyr	Met	Thr	Glu	Ile	Ile	Ala	Thr	Asn	Arg	Gly	Leu	Pro	Gly	Ile	Ala
145															160
Phe	Cys	Ala	Pro	Gly	Ser	Asn	Gly	Pro	Ile	Val	Lys	Leu	Gly	Gly	Gln
165															175
Glu	Thr	Pro	Gly	Phe	His	Asn	Val	Asn	Phe	Glu	His	Asp	Pro	Ala	Gly
180															190
Asn	Val	Met	Thr	Gly	Val	Tyr	Thr	His	Val	Gln	Trp	Ser	Ile	Tyr	Val
195															205
Gly	Cys	Asp	Gly	Met	Thr	His	Gly	Ile	Glu	Asn	Met	Val	Asn	Tyr	Phe
210															220
Lys	Asp	Lys	Arg	Asp	Leu	Thr	Asn	Arg	Asn	Ile	Gln	Gly	Arg	Ser	Glu
225															240
Ser	His	Asn	Thr	Gly	Tyr	Tyr	Tyr	Pro	Lys						
245															250

<210> 75

<211> 1335

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 75

atgactacta	aatcttttt	aattcacgga	tggctctgtca	agacaacaca	aacatatcag	60
gcgctgcacc	ttaagttggc	agagcaggga	tatcagctgg	aatatattta	cctccggcgg	120
tatctgtccc	ttgaaaatca	tatcgaaata	cggatattg	caaaagcaat	gcaccgtgca	180
ttgctggaga	ggattaccga	ctggagtcag	cctttccatt	ttattactca	cagtacggga	240

ggtatggtcg ccaaataattt gatattgaat cattataaaag gaagtattgc aaaacaaaaa	300
ccactcaaaa atgttgtt tctggctgca cctaattttt gttcaaggct ggcacaccat	360
ggacgtacca tgctggaga aataatggaa ctgggagaaa cagggaaagaa gattctgaa	420
tctctggagt taggaagtgc ttttctgtgg gatgtgaatg agcagtttt taatcgctcc	480
aattggaaaag ataaaagaaaat aaagttctat aacctgatag gagacagggt caaaaacggat	540
tttttaaat cccaaatttt tccagctgcg tttgaaagcg ggtcagatat ggtgattcgg	600
gttgcggcag gaaatcagaa ctttgcgg tacaggtacg atagtcagaa agatagctt	660
actgttgtca atgagttgaa aggaattgct tttggtgctc tctaccaata tacacattcc	720
aatgatgatt atgaaatcct gaacagcatc aaaaaaagtt caacccttga aaaccatcag	780
gcactcagac taattgtaga atgtctgaag gtttcgggag ataaagaata tgaaaatgtt	840
gttgcacagt tggctgcagc gacaaaagaa accagagaaa aacgccaggg atatgcacag	900
ctggatttcc gtttgcggg tgatgaaggc tttccaatag atgattatgt tgttagagctg	960
ggagtaatgg taaatggaaa acctaaacca tctaaaacag tagatgacgt gcataagaat	1020
aaaattacac caaaccatct tactgtattc attaacctga aagaactgga acctaactcg	1080
aagtacttta tcaatattaa atcgatatcg gaatcctcca tgtatagttt cgatccgtct	1140
gtcaggacta tagagcttgc ttctaacgag attacaaaaa ttatccgtga ggaccataca	1200
acacagattt atgtgatact ttcccggact cctgctaaaa accttttcat gtttcatcgc	1260
ggagatgatg aagacatcata tgcgatgg tcgcgtacg gaaaaacaaa aagtacaaag	1320
cagggataaa aataa	1335

<210> 76

<211> 444

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 76

Met Thr Thr Lys Ile Phe Leu Ile His Gly Trp Ser Val Lys Thr Thr	
1 5 10 15	
Gln Thr Tyr Gln Ala Leu His Leu Lys Leu Ala Glu Gln Gly Tyr Gln	
20 25 30	
Leu Glu Asp Ile Tyr Leu Gly Arg Tyr Leu Ser Leu Glu Asn His Ile	
35 40 45	
Glu Ile Arg Asp Ile Ala Lys Ala Met His Arg Ala Leu Leu Glu Arg	
50 55 60	
Ile Thr Asp Trp Ser Gln Pro Phe His Phe Ile Thr His Ser Thr Gly	
65 70 75 80	
Gly Met Val Ala Lys Tyr Trp Ile Leu Asn His Tyr Lys Gly Ser Ile	
85 90 95	
Ala Lys Gln Lys Pro Leu Lys Asn Val Val Phe Leu Ala Ala Pro Asn	
100 105 110	
Phe Gly Ser Arg Leu Ala His His Gly Arg Thr Met Leu Gly Glu Ile	
115 120 125	
Met Glu Leu Gly Glu Thr Gly Lys Ile Leu Glu Ser Leu Glu Leu	
130 135 140	
Gly Ser Ala Phe Ser Trp Asp Val Asn Glu Gln Phe Phe Asn Ala Ser	
145 150 155 160	
Asn Trp Lys Asp Lys Glu Ile Lys Phe Tyr Asn Leu Ile Gly Asp Arg	
165 170 175	
Val Lys Thr Asp Phe Phe Lys Ser Lys Ile Phe Pro Ala Ala Phe Glu	
180 185 190	
Ser Gly Ser Asp Met Val Ile Arg Val Ala Ala Gly Asn Gln Asn Phe	
195 200 205	
Val Arg Tyr Arg Tyr Asp Ser Gln Lys Asp Ser Phe Thr Val Val Asn	
210 215 220	

Glu Leu Lys Gly Ile Ala Phe Gly Ala Leu Tyr Gln Tyr Thr His Ser
 225 230 235 240
 Asn Asp Asp Tyr Gly Ile Leu Asn Ser Ile Lys Lys Ser Ser Thr Leu
 245 250 255
 Glu Asn His Gln Ala Leu Arg Leu Ile Val Glu Cys Leu Lys Val Ser
 260_ 265 270
 Gly Asp Lys Glu Tyr Glu Asn Val Val Ala Gln Leu Ala Ala Ala Thr
 275 280 285
 Lys Glu Thr Arg Glu Lys Arg Gln Gly Tyr Ala Gln Leu Asp Phe Arg
 290 295 300
 Phe Arg Asp Asp Glu Gly Phe Pro Ile Asp Asp Tyr Val Val Glu Leu
 305 310 315 320
 Gly Val Met Val Asn Gly Lys Pro Lys Pro Ser Lys Thr Val Asp Asp
 325 330 335
 Val His Lys Asn Lys Ile Thr Pro Asn His Leu Thr Val Phe Ile Asn
 340 345 350
 Leu Lys Glu Leu Glu Pro Asn Leu Lys Tyr Phe Ile Asn Ile Lys Ser
 355 360 365
 Ile Ser Glu Ser Ser Met Tyr Ser Tyr Asp Pro Ala Val Arg Thr Ile
 370 375 380
 Glu Leu Ala Ser Asn Glu Ile Thr Lys Ile Ile Arg Glu Asp His Thr
 385 390 395 400
 Thr Gln Ile Asp Val Ile Leu Ser Arg Thr Pro Ala Lys Asn Leu Phe
 405 410 415
 Met Phe His Arg Gly Asp Asp Glu Asp Leu His Val Thr Trp Ser Arg
 420 425 430
 Tyr Gly Glu Thr Lys Ser Thr Lys Gln Gly Ile Lys
 435 440

<210> 77

<211> 1026

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 77
 atggcttatac actttaaaaa cttggcttc gaaggcggtg gcgtgaaagg catgcctac 60
 gtgggtgctc ttgaagtact tgagagagaa ggcattctga aagacatcaa acgcgtggct 120
 ggtacttcgg ctggagcgct gggtccgtc ttaatcagtt tggctatac cgcccaagaa 180
 ttgaaggaca tcctatggaa aatcaatttc caaaaacctt tgacagctc gtggggcttg 240
 gtgcgaaca cggcacgtt cattgaggat tacggtttgt acaaagggtga gttttccgc 300
 gaattggttg ccggctacat caagaaaaa acgggcaata gtgaaagcac tttcaaggat 360
 ctggccaaat caaaagattt ccgtggcctc agccttattt gttagcgatct gtccacagga 420
 tactcaaagg tgttcagcaa cgaattcacc ccaaactca aagttagctga tgcagcccc 480
 atctccatgt cgataccctt gttttcaaa gccgttcgcg gtgtaaacgg tgatggacac 540
 atttacgtcg atgggtggact gtttagacaac tatgccatca agtgtttcga ccgcgtcaat 600
 tacgtaaaga ataagaacaa cgtacggta accgagttt ataaaaagac caacaagtcg 660
 ctgaaaagca aaaacaagct gaccaacgaa tacgtctaca ataaaagaaaac ttggggcttc 720
 cgattggatg ccaaagaaca gattgagatg tttctcgacc atagtataga accaaaggca 780
 aaggacattg actcactatt ctcttacacg aaggcttgg tcaccaccct catcgacttt 840
 caaaaacaatg tacatttgca tagtgacgac tggcaacgca cagtctatat cgactctta 900
 ggtatcagtt ccactgactt cggcatctt gactctaaaa aacagaaaact cgtcgattca 960
 ggcattttgc atacgcaaaa atacctggat tggtataaca acgacgaaaga gaaagccaac 1020
 aaatag 1026

<210> 78
<211> 341
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 78
Met Ala Tyr His Phe Lys Asn Leu Val Phe Glu Gly Gly Val Lys
1 5 10 15
Gly Ile Ala Tyr Val Gly Ala Leu Glu Val Leu Glu Arg Glu Gly Ile
20 25 30
Leu Lys Asp Ile Lys Arg Val Ala Gly Thr Ser Ala Gly Ala Leu Val
35 40 45
Ala Val Leu Ile Ser Leu Gly Tyr Thr Ala Gln Glu Leu Lys Asp Ile
50 55 60
Leu Trp Lys Ile Asn Phe Gln Asn Phe Leu Asp Ser Ser Trp Gly Leu
65 70 75 80
Val Arg Asn Thr Ala Arg Phe Ile Glu Asp Tyr Gly Trp Tyr Lys Gly
85 90 95
Glu Phe Phe Arg Glu Leu Val Ala Gly Tyr Ile Lys Glu Lys Thr Gly
100 105 110
Asn Ser Glu Ser Thr Phe Lys Asp Leu Ala Lys Ser Lys Asp Phe Arg
115 120 125
Gly Leu Ser Leu Ile Gly Ser Asp Leu Ser Thr Gly Tyr Ser Lys Val
130 135 140
Phe Ser Asn Glu Phe Thr Pro Asn Val Lys Val Ala Asp Ala Ala Arg
145 150 155 160
Ile Ser Met Ser Ile Pro Leu Phe Phe Lys Ala Val Arg Gly Val Asn
165 170 175
Gly Asp Gly His Ile Tyr Val Asp Gly Gly Leu Leu Asp Asn Tyr Ala
180 185 190
Ile Lys Val Phe Asp Arg Val Asn Tyr Val Lys Asn Lys Asn Asn Val
195 200 205
Arg Tyr Thr Glu Tyr Tyr Glu Lys Thr Asn Lys Ser Leu Lys Ser Lys
210 215 220
Asn Lys Leu Thr Asn Glu Tyr Val Tyr Asn Lys Glu Thr Leu Gly Phe
225 230 235 240
Arg Leu Asp Ala Lys Glu Gln Ile Glu Met Phe Leu Asp His Ser Ile
245 250 255
Glu Pro Lys Ala Lys Asp Ile Asp Ser Leu Phe Ser Tyr Thr Lys Ala
260 265 270
Leu Val Thr Thr Leu Ile Asp Phe Gln Asn Asn Val His Leu His Ser
275 280 285
Asp Asp Trp Gln Arg Thr Val Tyr Ile Asp Ser Leu Gly Ile Ser Ser
290 295 300
Thr Asp Phe Gly Ile Ser Asp Ser Lys Lys Gln Lys Leu Val Asp Ser
305 310 315 320
Gly Ile Leu His Thr Gln Lys Tyr Leu Asp Trp Tyr Asn Asn Asp Glu
325 330 335
Glu Lys Ala Asn Lys
340

<210> 79
<211> 1701
<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 79	-					
atgagaaaatt	tcagcaagggg	attgaccagt	attttgcctta	gcatacgac	atccaccagt	60
gcgatggcct	ttacccagat	cggggccggc	ggagcgattc	cgatggcca	tgagtggcta	120
acccgcccct	cggcgtggaa	actgctgaat	gccgacaatc	tggtcggcaa	tgacccggcc	180
gaccacgct	tgggctggag	cgaaggctctc	gccaacaatc	tcgatctctc	gaatgcccag	240
aacgaagtgc	agcgcatcaa	gagcattacc	aagagccacg	ccctgtatga	gcccgcgttac	300
gatgacgttt	tcgcccggcat	cgtcgccgag	cgctgggtt	ataccggccg	tttcaacgtg	360
gccaaggcca	ccgtcgccaa	gatcgattgc	ttcagcggccg	tcgcgcaaga	gcccgcgttat	420
gtgcaacaag	accatttcat	gcccgttat	gacgacgtgg	gtggacaagg	gggcgtgaac	480
gctgcccgc	gcgccgcagca	gchgcttatac	aatcacttcg	tcaacgcagc	catggccgaa	540
gagaagagca	tcaaggcatg	ggatggccgc	ggttattttt	cgctggaaaa	agtcaagccac	600
aactacttct	tgttgtggccg	cggcgttcat	ttgttccagg	attcttcag	ccccgaacac	660
accgtgcgc	tgcctgaaga	caattacgtc	aaagtccgtc	aggtcaaggc	gtatctctgc	720
tctgaaggtg	ccgaacacgca	tacgcacaac	acgcaagatg	ccatcaactt	caccagccgc	780
gatgtcatct	ggaaacacgaa	caccgtctg	gatgcaggt	ggagcaccta	caaggccac	840
aacatgaagc	cgtgtggcatt	ggttggccctc	gaagccagca	aagatttgtg	ggccgcctt	900
attcgaccca	tggccgttcc	ccgcgaggag	cgtcgccgc	tgcggcaaca	ggaagcgcag	960
gctctcgta	atcaactgggt	gtcggtcgac	gaacaggaaa	tgctgaactg	gtacgaagaa	1020
gaagagcacc	gcgatcatac	gtacgtcaag	gaacccggcc	agagcggccc	aggttcgtcg	1080
ttatttcgatt	gcatgggtgg	tctgggtgtg	gcctcgccga	gtcaggcgca	acgggtggcg	1140
gaactcgatc	agcaacgccc	ccaatgtttt	ttcaacgtca	aggccgtac	tggctatggc	1200
gatctgaatg	atccacacat	ggatattccg	tacaactggc	aatgggtgtc	gtcgacgcaa	1260
tggaaaatcc	ctgcggccga	ctggaaaatc	ccgcagctgc	ccgcccattc	agggaaatca	1320
gtcgtcatca	agaattcgat	caatggcgat	ccgctgggtgg	cacctgcccgg	gctcaagcac	1380
aacaccgatg	tttacgggtgc	accgggtgag	gcgattgaat	tcattttcg	cggtgatttc	1440
aaccatgagg	cgtatttccg	caccaaggac	aacgcggatc	tgttcctgag	ttacagcgcg	1500
gtatcgccca	agggcttgct	gtacaacacg	cccaaccagg	ccgggttatcg	tgttcagcct	1560
tatgggtgtc	tgtggacgat	tgagaatacc	tactggaaatg	atttcctctg	gtacaacacgc	1620
tcgaacgacc	gcatctatgt	cagccgcacc	ggcgctgcca	acaagtcaaca	ctcccagtgg	1680
attattgacg	gcttgcagtg	a				1701

<210> 80

<211> 566

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(23)

<400> 80															
Met	Arg	Asn	Phe	Ser	Lys	Gly	Leu	Thr	Ser	Ile	Leu	Ser	Ile	Ala	
1				5			10				15				
Thr	Ser	Thr	Ser	Ala	Met	Ala	Phe	Thr	Gln	Ile	Gly	Ala	Gly	Gly	Ala
					20			25			30				
Ile	Pro	Met	Gly	His	Glu	Trp	Leu	Thr	Arg	Arg	Ser	Ala	Leu	Glu	Leu
					35			40			45				
Leu	Asn	Ala	Asp	Asn	Leu	Val	Gly	Asn	Asp	Pro	Ala	Asp	Pro	Arg	Leu
					50			55			60				
Gly	Trp	Ser	Glu	Gly	Leu	Ala	Asn	Leu	Asp	Leu	Ser	Asn	Ala	Gln	

65	70	75	80
Asn Glu Val Gln Arg	Ile Lys Ser Ile Thr	Lys Ser His Ala Leu	Tyr
85	90	95	
Glu Pro Arg Tyr Asp Asp Val Phe Ala Ala	Ile Val Gly Glu Arg Trp		
100	105	110	
Val Asp Thr Ala-Gly Phe Asn Val Ala Lys Ala Thr Val Gly Lys Ile			
115	120	125	
Asp Cys Phe Ser Ala Val Ala Gln Glu Pro Ala Asp Val Gln Gln Asp			
130	135	140	
His Phe Met Arg Arg Tyr Asp Asp Val Gly Gly Gln Gly Val Asn			
145	150	155	160
Ala Ala Arg Arg Ala Gln Gln Arg Phe Ile Asn His Phe Val Asn Ala			
165	170	175	
Ala Met Ala Glu Glu Lys Ser Ile Lys Ala Trp Asp Gly Gly Tyr			
180	185	190	
Ser Ser Leu Glu Lys Val Ser His Asn Tyr Phe Leu Phe Gly Arg Ala			
195	200	205	
Val His Leu Phe Gln Asp Ser Phe Ser Pro Glu His Thr Val Arg Leu			
210	215	220	
Pro Glu Asp Asn Tyr Val Lys Val Arg Gln Val Lys Ala Tyr Leu Cys			
225	230	235	240
Ser Glu Gly Ala Glu Gln His Thr His Asn Thr Gln Asp Ala Ile Asn			
245	250	255	
Phe Thr Ser Gly Asp Val Ile Trp Lys Gln Asn Thr Arg Leu Asp Ala			
260	265	270	
Gly Trp Ser Thr Tyr Lys Ala Ser Asn Met Lys Pro Val Ala Leu Val			
275	280	285	
Ala Leu Glu Ala Ser Lys Asp Leu Trp Ala Ala Phe Ile Arg Thr Met			
290	295	300	
Ala Val Ser Arg Glu Glu Arg Arg Ala Val Ala Glu Gln Glu Ala Gln			
305	310	315	320
Ala Leu Val Asn His Trp Leu Ser Phe Asp Glu Gln Glu Met Leu Asn			
325	330	335	
Trp Tyr Glu Glu Glu His Arg Asp His Thr Tyr Val Lys Glu Pro			
340	345	350	
Gly Gln Ser Gly Pro Gly Ser Ser Leu Phe Asp Cys Met Val Gly Leu			
355	360	365	
Gly Val Ala Ser Gly Ser Gln Ala Gln Arg Val Ala Glu Leu Asp Gln			
370	375	380	
Gln Arg Arg Gln Cys Leu Phe Asn Val Lys Ala Ala Thr Gly Tyr Gly			
385	390	395	400
Asp Leu Asn Asp Pro His Met Asp Ile Pro Tyr Asn Trp Gln Trp Val			
405	410	415	
Ser Ser Thr Gln Trp Lys Ile Pro Ala Ala Asp Trp Lys Ile Pro Gln			
420	425	430	
Leu Pro Ala Asp Ser Gly Lys Ser Val Val Ile Lys Asn Ser Ile Asn			
435	440	445	
Gly Asp Pro Leu Val Ala Pro Ala Gly Leu Lys His Asn Thr Asp Val			
450	455	460	
Tyr Gly Ala Pro Gly Glu Ala Ile Glu Phe Ile Phe Val Gly Asp Phe			
465	470	475	480
Asn His Glu Ala Tyr Phe Arg Thr Lys Asp Asn Ala Asp Leu Phe Leu			
485	490	495	
Ser Tyr Ser Ala Val Ser Gly Lys Gly Leu Leu Tyr Asn Thr Pro Asn			
500	505	510	
Gln Ala Gly Tyr Arg Val Gln Pro Tyr Gly Val Leu Trp Thr Ile Glu			
515	520	525	

<210> 81
<211> 1422
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<210> 82
<211> 473
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<221> SIGNAL
<222> (1)...(25)

<400> 82
Met Lys Lys Lys Leu Cys Thr Met Ala Leu Val Thr Ala Ile Ser Ser
1 5 10 15
Gly Val Val Thr Ile Pro Thr Glu Ala Gln Ala Cys Gly Ile Gly Glu
20 25 30

Val Met Lys Gln Glu Asn Gln Glu His Lys Arg Val Lys Arg Trp Ser
 35 40 45
 Ala Glu His Pro His His Ser Asn Glu Ser Thr His Leu Trp Ile Ala
 50 55 60
 Arg Asn Ala Ile Gln Ile Met Ser Arg Asn Gln Asp Lys Thr Val Gln
 65 70 75 80
 Glu Asn Glu Leu Gln Phe Leu Asn Thr Pro Glu Tyr Lys Glu Leu Phe
 85 90 95
 Glu Arg Gly Leu Tyr Asp Ala Asp Tyr Leu Asp Glu Phe Asn Asp Gly
 100 105 110
 Gly Thr Gly Thr Ile Gly Ile Asp Gly Leu Ile Arg Gly Gly Trp Lys
 115 120 125
 Ser His Phe Tyr Asp Pro Asp Thr Arg Lys Asn Tyr Lys Gly Glu Glu
 130 135 140
 Glu Pro Thr Ala Leu Ser Gln Gly Asp Lys Tyr Phe Lys Leu Ala Gly
 145 150 155 160
 Glu Tyr Phe Lys Lys Gly Asp Gln Lys Gln Ala Phe Tyr Tyr Leu Gly
 165 170 175
 Val Ala Thr His Tyr Phe Thr Asp Ala Thr Gln Pro Met His Ala Ala
 180 185 190
 Asn Phe Thr Ala Val Asp Thr Ser Ala Leu Lys Phe His Ser Ala Phe
 195 200 205
 Glu Asn Tyr Val Thr Thr Ile Gln Thr Gln Tyr Glu Val Ser Asp Gly
 210 215 220
 Glu Gly Val Tyr Asn Leu Val Asn Ser Asn Asp Pro Lys Gln Trp Ile
 225 230 235 240
 His Glu Thr Ala Arg Leu Ala Lys Val Glu Ile Gly Asn Ile Thr Asn
 245 250 255
 Asp Glu Ile Lys Ser His Tyr Asn Lys Gly Asn Asn Ala Leu Trp Gln
 260 265 270
 Gln Glu Val Met Pro Ala Val Gln Arg Ser Leu Glu Asn Ala Gln Arg
 275 280 285
 Asn Thr Ala Gly Phe Ile His Leu Trp Phe Lys Thr Phe Val Gly Asn
 290 295 300
 Thr Ala Ala Glu Glu Ile Glu Asn Thr Val Val Lys Asp Ser Lys Gly
 305 310 315 320
 Glu Ala Ile Gln Asp Asn Lys Tyr Phe Val Val Pro Ser Glu Phe
 325 330 335
 Leu Asn Arg Gly Leu Thr Phe Glu Val Tyr Ala Arg Asn Asp Tyr Ala
 340 345 350
 Leu Leu Ser Asn Tyr Val Asp Asp Ser Lys Val His Gly Thr Pro Val
 355 360 365
 Gln Phe Val Phe Asp Lys Asp Asn Asn Gly Ile Leu His Arg Gly Glu
 370 375 380
 Ser Val Leu Leu Lys Met Thr Gln Ser Asn Tyr Asp Asn Tyr Val Phe
 385 390 395 400
 Leu Asn Tyr Ser Asn Leu Thr Asn Trp Val His Leu Ala Gln Gln Lys
 405 410 415
 Thr Asn Thr Ala Gln Phe Lys Val Tyr Pro Asn Pro Asn Asn Pro Ser
 420 425 430
 Glu Tyr Tyr Leu Tyr Thr Asp Gly Tyr Pro Val Asn Tyr Gln Glu Asn
 435 440 445
 Gly Asn Gly Lys Ser Trp Ile Val Leu Gly Lys Lys Thr Asp Thr Pro
 450 455 460
 Lys Ala Trp Lys Phe Ile Gln Ala Glu
 465 470

<210> 83
<211> 1290
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<210> 84
<211> 429
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<221> SIGNAL
<222> (1)...(22)

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<400> 84
Met Lys Ile Val Ile Tyr Ser Phe Val Ala Gly Val Met Thr Ser
      5          10          15
1
Gly Gly Val Phe Ala Ala Ser Asp Asn Ile Val Glu Thr Ser Thr Pro
      20          25          30
Pro Gln His Gln Ala Pro Ser Arg Gln Asp Arg Ala Leu Phe Ala Gly
      35          40          45
Asp Thr Thr Thr Tyr Ile Lys Cys Val Tyr Lys Val Asp Gly Gln Asp
      50          55          60
Asp Ser Asn Pro Ser Ser Trp Leu Trp Ala Lys Val Gly Ser Asn
      65          70          75          80
Tyr Ala Lys Leu Lys Gly Tyr Trp Tyr Asn Ser Met Pro Leu Ala Asn
      85          90          95
Met Phe Tyr Thr Glu Val Pro Tyr Ala Glu Val Met Asp Leu Cys Asn

```

100	105	110
Ser Thr Leu Lys Ala Val Gly Ala Asn Ser Thr Leu Val Ile Pro Tyr		
115	120	125
Ala Ser Asp Tyr Thr Leu Ser Tyr Tyr Tyr Val Ile Trp Asn Gln Gly		
130	135	140
Ala Asn Gln Pro Val Ile Asn Val Gly Gly Arg Glu Leu Asp Arg Met		
145	150	155
Val Val Phe Gly Asp Ser Leu Ser Asp Thr Val Asn Val Tyr Asn Gly		
165	170	175
Ser Tyr Gly Thr Val Pro Asn Ser Thr Ser Trp Leu Leu Gly His Phe		
180	185	190
Ser Asn Gly Lys Leu Trp His Glu Tyr Leu Ser Thr Val Leu Asn Leu		
195	200	205
Pro Ser Tyr Val Trp Ala Thr Gly Asn Ala Glu Ser Gly Glu Lys Pro		
210	215	220
Phe Phe Asn Gly Phe Ser Lys Gln Val Asp Ser Phe Arg Asp Tyr His		
225	230	235
Ala Arg Thr Lys Gly Tyr Asp Ile Ser Lys Thr Leu Phe Thr Val Leu		
245	250	255
Phe Gly Gly Asn Asp Phe Ile Thr Gly Gly Lys Ser Ala Asp Glu Val		
260	265	270
Ile Glu Gln Tyr Thr Val Ser Leu Asn Tyr Leu Ala Gln Leu Gly Ala		
275	280	285
Lys Gln Val Ala Ile Phe Arg Leu Pro Asp Phe Ser Val Ile Pro Ser		
290	295	300
Val Ser Thr Trp Thr Glu Ala Asp Lys Asp Lys Leu Arg Glu Asn Ser		
305	310	315
Val Gln Phe Asn Asp Gln Ala Glu Lys Leu Ile Ala Lys Leu Asn Ala		
325	330	335
Ala His Pro Gln Thr Thr Phe Tyr Thr Leu Arg Leu Asp Asp Ala Phe		
340	345	350
Lys Gln Val Leu Glu Asn Ser Asp Gln Tyr Gly Phe Val Asn Lys Thr		
355	360	365
Asp Thr Cys Leu Asp Ile Ser Gln Gly Gly Tyr Asn Tyr Ala Ile Gly		
370	375	380
Ala Arg Ala Lys Thr Ala Cys Lys Ser Ser Asn Ala Ala Phe Val Phe		
385	390	395
Trp Asp Asn Met His Pro Thr Thr Lys Thr His Gly Leu Leu Ala Asp		
405	410	415
Leu Leu Lys Asp Asp Val Val Arg Gly Leu Ala Ala Pro		
420	425	

<210> 85

<211> 1038

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 85

atgacaacac aatttagaaa cttgatattt gaaggcggcg gtgtaaaagg tggatgtttac	60
attggcgcca tgcagattct tgaaaatcg ggcgtgttgc aagatattcg ccgagtcgga	120
gggtgcagtg cgggtgcgat taacgcgcgtg attttgccgc taggttacac ggtccgtgaa	180
caaaaagaga tcttacaagc caccgatttt aaccagttt tggataactc ttggggggtt	240
atccgtgata ttccgcaggtc tgctcgagac ttggctgga ataagggtga ttcttttagt	300
agctggatag gtgatttgat tcatcgctgt ttgggaatc gccgagcgcac gttcaaagat	360

ctgcaaaagg ccaagcttcc tgcattttat gtcatcggtta ctaatctgtc tacagggttt	420
gcagagggtgt tttctgccga aagacacccc gatatggagc tggcgacagc ggtgcgtatc	480
tccatgtcga taccgctgtt ctttgcggcc gtgcgtcacg gtgatcgaca agatgtgtat	540
gtcgatgggg gtgttcaact taactatccg attaaactgt ttgatcggtt gcgttacatt	600
gatttggcca aagatcccgg tgccgttcgg cgaacgggtt attacaacaa agaaaaacgct	660
cgccttcagc ttgatcggtc gggccatagc ccctatgtt acaatcgcca gaccttgggt	720
ttgcgactgg atagtcgcga ggagataggg ctctttcggtt atgacgaacc cctcaaggc	780
aaacccatta agtccttcac tgactacgct cgacaactt tcggtgcgtt gatgaatgca	840
caggaaaaaga ttcatctaca tggcgatgtat tggcaacgca cgatctatat cgatacattg	900
gatgtggta cgacggactt caatcttct gatgcaacta agcaaggact gattgagcaa	960
ggaattaacg gcaccgaaaa ttatttcgag tggtttgata atccgttaga gaagcctgtg	1020
aatagagtgg agtcatag	1038

<210> 86

<211> 345

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 86

Met Thr Thr Gln Phe Arg Asn Leu Ile Phe Glu Gly Gly Val Lys	
1 5 10 15	
Gly Val Ala Tyr Ile Gly Ala Met Gln Ile Leu Glu Asn Arg Gly Val	
20 25 30	
Leu Gln Asp Ile Arg Arg Val Gly Gly Cys Ser Ala Gly Ala Ile Asn	
35 40 45	
Ala Leu Ile Phe Ala Leu Gly Tyr Thr Val Arg Glu Gln Lys Glu Ile	
50 55 60	
Leu Gln Ala Thr Asp Phe Asn Gln Phe Met Asp Asn Ser Trp Gly Val	
65 70 75 80	
Ile Arg Asp Ile Arg Arg Leu Ala Arg Asp Phe Gly Trp Asn Lys Gly	
85 90 95	
Asp Phe Phe Ser Ser Trp Ile Gly Asp Leu Ile His Arg Arg Leu Gly	
100 105 110	
Asn Arg Arg Ala Thr Phe Lys Asp Leu Gln Lys Ala Lys Leu Pro Asp	
115 120 125	
Leu Tyr Val Ile Gly Thr Asn Leu Ser Thr Gly Phe Ala Glu Val Phe	
130 135 140	
Ser Ala Glu Arg His Pro Asp Met Glu Leu Ala Thr Ala Val Arg Ile	
145 150 155 160	
Ser Met Ser Ile Pro Leu Phe Phe Ala Ala Val Arg His Gly Asp Arg	
165 170 175	
Gln Asp Val Tyr Val Asp Gly Gly Val Gln Leu Asn Tyr Pro Ile Lys	
180 185 190	
Leu Phe Asp Arg Glu Arg Tyr Ile Asp Leu Ala Lys Asp Pro Gly Ala	
195 200 205	
Val Arg Arg Thr Gly Tyr Tyr Asn Lys Glu Asn Ala Arg Phe Gln Leu	
210 215 220	
Asp Arg Pro Gly His Ser Pro Tyr Val Tyr Asn Arg Gln Thr Leu Gly	
225 230 235 240	
Leu Arg Leu Asp Ser Arg Glu Glu Ile Gly Leu Phe Arg Tyr Asp Glu	
245 250 255	
Pro Leu Lys Gly Lys Pro Ile Lys Ser Phe Thr Asp Tyr Ala Arg Gln	
260 265 270	
Leu Phe Gly Ala Leu Met Asn Ala Gln Glu Lys Ile His Leu His Gly	

275	280	285
Asp Asp Trp Gln Arg Thr Ile Tyr Ile Asp Thr Leu Asp Val Gly Thr		
290	295	300
Thr Asp Phe Asn Leu Ser Asp Ala Thr Lys Gln Ala Leu Ile Glu Gln		
305	310	315
Gly Ile Asn Gly_Thr Glu Asn Tyr Phe Glu Trp Phe Asp Asn Pro Leu		320
325	330	335
Glu Lys Pro Val Asn Arg Val Glu Ser		
340	345	

<210> 87

<211> 870

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 87

atgtcaaaga aactcgtaat atcggtagcg ggcggcggag cactcgaaat cggaccac	60
gcattcctgt gcaagattga acagatgctg ggaaagaaga taccggcagg tgccgaggca	120
tacggccggca cttcaaccgg agcaataatt gcggcaggac tggccgaaagg ctactccg	180
catgaactgt tcgacccata caaatcaaat ctcagcaaga tattcaccaa ataca	240
tacaaacgc tgcagccaac gtgtcctaca tatgacaaca gtaacctaaa gaaattactg	300
aaggacaaat tcaaggggcaa ggtcgccgac tggaaaactc ccgtatacat cccggcaaca	360
cacatgaacg gccaatccgt agaaaagggtg tggacttgg gtgacaagaa tggacttgg	420
tggtttgcca ttctgacaag taccggcggca ccaacctatt tcgactgcatt atacgacgac	480
gagaagaact gctacatcga tgggtggcatg tggtgcaacg caccatcgat tggcttaat	540
gcaggcctga tcaagtccgg ctggccaac tacaagggtcc tggaccttgg gaccggcatg	600
gacacaccga atacggaaag cgaaaaacaag acacttctcg gatggggggg atacatcata	660
agcaactggg tagcccggtc cagcaagtcc ggcgaatacg aggtaaaggc cataatcggg	720
gaagacaatg tatgtgttgc ccgtccatac gtaagcaaga aaccgaagat ggatgacgtg	780
gacagcaaga cgctggatga agtcgtggat atctggaaa actacttcta cgccaaggcag	840
aaagacatcg catcggtgct gaaaatctag	870

<210> 88

<211> 289

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 88

Met Ser Lys Lys Leu Val Ile Ser Val Ala Gly Gly Gly Ala Leu Gly	
1 . 5 . 10 . 15	
Ile Gly Pro Leu Ala Phe Leu Cys Lys Ile Glu Gln Met Leu Gly Lys	
20 . 25 . 30	
Lys Ile Pro Gln Val Ala Gln Ala Tyr Ala Gly Thr Ser Thr Gly Ala	
35 . 40 . 45	
Ile Ile Ala Ala Gly Leu Ala Glu Gly Tyr Ser Ala His Glu Leu Phe	
50 . 55 . 60	
Asp Leu Tyr Lys Ser Asn Leu Ser Lys Ile Phe Thr Lys Tyr Ser Trp	
65 . 70 . 75 . 80	
Tyr Lys Arg Leu Gln Pro Thr Cys Pro Thr Tyr Asp Asn Ser Asn Leu	
85 . 90 . 95	
Lys Lys Leu Leu Lys Asp Lys Phe Lys Gly Lys Val Gly Asp Trp Lys	

100	105	110
Thr Pro Val Tyr Ile Pro Ala Thr His Met Asn Gly Gln Ser Val Glu		
115	120	125
Lys Val Trp Asp Leu Gly Asp Lys Asn Val Asp Lys Trp Phe Ala Ile		
130	135	140
Leu, Thr Ser Thr Ala Ala Pro Thr Tyr Phe Asp Cys Ile Tyr Asp Asp		
145	150	155
Glu Lys Asn Cys Tyr Ile Asp Gly Gly Met Trp Cys Asn Ala Pro Ile		
165	170	175
Asp Val Leu Asn Ala Gly Leu Ile Lys Ser Gly Trp Ser Asn Tyr Lys		
180	185	190
Val Leu Asp Leu Glu Thr Gly Met Asp Thr Pro Asn Thr Glu Ser Gly		
195	200	205
Asn Lys Thr Leu Leu Gly Trp Gly Glu Tyr Ile Ile Ser Asn Trp. Val		
210	215	220
Ala Arg Ser Ser Lys Ser Gly Glu Tyr Glu Val Lys Ala Ile Ile Gly		
225	230	235
Glu Asp Asn Val Cys Val Ala Arg Pro Tyr Val Ser Lys Lys Pro Lys		
245	250	255
Met Asp Asp Val Asp Ser Lys Thr Leu Asp Glu Val Val Asp Ile Trp		
260	265	270
Glu Asn Tyr Phe Tyr Ala Lys Gln Lys Asp Ile Ala Ser Trp Leu Lys		
275	280	285
Ile		

<210> 89

<211> 1422

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 89	60
atgaaaaaga aattatgtac actggctttt gtaacagcaa tatcttcttat cgctatcaca	120
attccaaacag aagcacaagc ttgtggaata ggcgaagtaa tgaaacagggaa gaaccaagag	180
cacaacgtg tgaagagatg gtctcgaa catccacatc atcctaataa aagtacgcac	240
ttatggattt cgcgaaatgc aattcaaata atggcccgta atcaagataa gacggttcaa	300
gaaaatgaat tacaattttt aaataactcct gaatataagg agttatgttga aagaggtctt	360
tatgtatgtt attaccttga tgaatataac gatggaggta caggtacataa cggcattgtat	420
gggctaatta aaggagggtt gaaatctcat ttttacgatc cogatacggaa aaagaactat	480
aaagggaaag aagaaccaac agctctctt caaggagata aatattttaa attagcaggc	540
gattacttta agaaaagagga ttgaaaccaa gctttctatt atttaggtgt tgccgacgcac	600
tacttcacag atgctactca gccaatgcatt gctgctaatt ttacagccgt cgacacggat	660
gctttaaagt ttcatagcgc tttgaaaat tatgtacgaa caatttcacac acatgtatgaa	720
gtatctgtatgtt gtagggcgt atataatttta gtgaatttca atgatccaaa acatggatc	780
catgaaaacag cgagactcgc aaaagtggaa atcgggaaaca ttaccaatga cgagattaaa	840
tctcactata ataaaaggaaa caatgtctt tggcaacaag aagttatgtcc agctgtcccg	900
aggagtttag agaacgcaca aagaaacacg gcgggattta ttcatatgtt gttaaaaca	960
tttgttggca atactgcgc tgaagaaatt gaaaatactg tagtggaaaga ttctaaagga	1020
gaagcaatac aagataataa aaaataacttc gtatgtccaa gtgagtttctt aaatagaggt	1080
ttgacctttt aagtatatgc aagaatgac tatgcactat tatctaattt cgtatgtat	1140
agtaaaagtcc atggtaacgc agttcagttt gtatgtata aagataataa cggatccctt	1200
catcgaggag aaagtataact gctgaaaatg acgcaatcta actatgataa ttacgtat	1260
ctaaactact ctaacttgac aaactgggtt catcttgcgc aacaaaaaaac aaataactgca	1320
cagttaaag tgtatccaaa tccgaataac ccatctgaat attacctata tacagatgga	

tacccagtaa attatcaaga aaatggtaac ggaaagagct ggattgtgtt aggaaaagaaa	1380
acagatacac caaaagcttg gaaatttata caggctgaat ag	1422

<210> 90
<211> 473
<212> PRT
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<221> SIGNAL
<222> (1)...(25)

<400> 90
Met Lys Lys Lys Leu Cys Thr Leu Ala Phe Val Thr Ala Ile Ser Ser
1 5 10 15
Ile Ala Ile Thr Ile Pro Thr Glu Ala Gln Ala Cys Gly Ile Gly Glu
20 25 30
Val Met Lys Gln Glu Asn Gln Glu His Lys Arg Val Lys Arg Trp Ser
35 40 45
Ala Glu His Pro His His Pro Asn Glu Ser Thr His Leu Trp Ile Ala
50 55 60
Arg Asn Ala Ile Gln Ile Met Ala Arg Asn Gln Asp Lys Thr Val Gln
65 70 75 80
Glu Asn Glu Leu Gln Phe Leu Asn Thr Pro Glu Tyr Lys Glu Leu Phe
85 90 95
Glu Arg Gly Leu Tyr Asp Ala Asp Tyr Leu Asp Glu Phe Asn Asp Gly
100 105 110
Gly Thr Gly Thr Ile Gly Ile Asp Gly Leu Ile Lys Gly Gly Trp Lys
115 120 125
Ser His Phe Tyr Asp Pro Asp Thr Arg Lys Asn Tyr Lys Gly Glu Glu
130 135 140
Glu Pro Thr Ala Leu Ser Gln Gly Asp Lys Tyr Phe Lys Leu Ala Gly
145 150 155 160
Asp Tyr Phe Lys Lys Glu Asp Trp Lys Gln Ala Phe Tyr Tyr Leu Gly
165 170 175
Val Ala Thr His Tyr Phe Thr Asp Ala Thr Gln Pro Met His Ala Ala
180 185 190
Asn Phe Thr Ala Val Asp Thr Ser Ala Leu Lys Phe His Ser Ala Phe
195 200 205
Glu Asn Tyr Val Thr Thr Ile Gln Thr Gln Tyr Glu Val Ser Asp Gly
210 215 220
Glu Gly Val Tyr Asn Leu Val Asn Ser Asn Asp Pro Lys Gln Trp Ile
225 230 235 240
His Glu Thr Ala Arg Leu Ala Lys Val Glu Ile Gly Asn Ile Thr Asn
245 250 255
Asp Glu Ile Lys Ser His Tyr Asn Lys Gly Asn Asn Ala Leu Trp Gln
260 265 270
Gln Glu Val Met Pro Ala Val Gln Arg Ser Leu Glu Asn Ala Gln Arg
275 280 285
Asn Thr Ala Gly Phe Ile His Leu Trp Phe Lys Thr Phe Val Gly Asn
290 295 300
Thr Ala Ala Glu Glu Ile Glu Asn Thr Val Val Lys Asp Ser Lys Gly
305 310 315 320
Glu Ala Ile Gln Asp Asn Lys Lys Tyr Phe Val Val Pro Ser Glu Phe
325 330 335

Leu Asn Arg Gly Leu Thr Phe Glu Val Tyr Ala Arg Asn Asp Tyr Ala
 340 345 350
 Leu Leu Ser Asn Tyr Val Asp Asp Ser Lys Val His Gly Thr Pro Val
 355 360 365
 Gln Phe Val Phe Asp Lys Asp Asn Asn Gly Ile Leu His Arg Gly Glu
 370 375 380
 Ser Ile Leu Leu Lys Met Thr Gln Ser Asn Tyr Asp Asn Tyr Val Phe
 385 390 395 400
 Leu Asn Tyr Ser Asn Leu Thr Asn Trp Val His Leu Ala Gln Gln Lys
 405 410 415
 Thr Asn Thr Ala Gln Phe Lys Val Tyr Pro Asn Pro Asn Asn Pro Ser
 420 425 430
 Glu Tyr Tyr Leu Tyr Thr Asp Gly Tyr Pro Val Asn Tyr Gln Glu Asn
 435 440 445
 Gly Asn Gly Lys Ser Trp Ile Val Leu Gly Lys Lys Thr Asp Thr Pro
 450 455 460
 Lys Ala Trp Lys Phe Ile Gln Ala Glu
 465 470

<210> 91
 <211> 1035
 <212> DNA
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 91

atgacaaccc	aatttagaaa	cctgatcttt	gagggcggcg	gtgtaaaggg	cattgcttac	60
gtcggagcaa	tgcagattct	tgaaaatcg	ggtgtattac	aagatattca	ccgagtcgga	120
ggttgttagt	cgggtgcgat	taacgcgtg	atttttgcgc	tgggttacac	agtccgtgag	180
caaaaagaga	tcttacaaat	taccgatttt	aaccagttt	tgataactc	gtgggggtgtt	240
attcgggata	ttcgcaggct	tgcgagagaa	tttggctgga	ataagggtaa	cttctttaat	300
acctggatag	gtgatttgat	tcatcgctgt	ttgggttaatc	gccgagccac	gttcaaagat	360
ctgaaaaagg	caaagcttcc	tgatctttat	gtcatcggt	ctaactgtc	tacagggttt	420
gcagagggtt	tttctgcgca	aagacacccc	gatatggagc	tggcgacagc	ggtgcgtatc	480
tccatgtcga	taccgctgtt	ctttgcggcc	gtgcgtcacg	gtgatcgaca	agatgtgtat	540
gtcgatgggg	gtgtgcagct	taactacccg	atcaagctgt	ttgatcgaac	tcgttatatt	600
gacctcgcca	aagatccggg	tgctgctcgc	cacacgggtt	attacaataa	agagaatgct	660
cgttttcagc	ttgagcgacc	gggccacagt	ccttatgtgt	acaatcgcca	aacattaggc	720
ttgcgtcttg	acagtcgtga	agagatagcg	ctgtttcggt	acgacgaacc	tcttcagggt	780
aaaccattta	agtccttcac	tgactacgct	cgacaaactt	ttgggtgcgt	gaagaatgca	840
caggaaaaaca	ttcacctaca	tggcgatgat	tggcagcgca	cggcttatat	cgatacattg	900
gatgtgggtt	cgacggattt	caatcttct	gatgcaacca	agcaagcact	gattgaacag	960
ggaattaacg	gcaccgaaaa	ttatttcgag	tggtttgata	atccgtttga	gaaggcctgtg	1020
aatagagtgg	agtaa					1035

<210> 92
 <211> 344
 <212> PRT
 <213> Unknown

<220>
 <223> Obtained from an environmental sample.

<400> 92
 Met Thr Thr Gln Phe Arg Asn Leu Ile Phe Glu Gly Gly Val Lys

1	5	10	15
Gly Ile Ala Tyr Val Gly Ala Met Gln	Ile Leu Glu Asn Arg	Gly Val	
20	25	30	
Leu Gln Asp Ile His Arg Val Gly Gly Cys Ser Ala Gly Ala Ile Asn			
35	40	45	
Ala Leu Ile Phe Ala Leu Gly Tyr Thr Val Arg Glu Gln Lys Glu Ile			
50	55	60	
Leu Gln Ile Thr Asp Phe Asn Gln Phe Met Asp Asn Ser Trp Gly Val			
65	70	75	80
Ile Arg Asp Ile Arg Arg Leu Ala Arg Glu Phe Gly Trp Asn Lys Gly			
85	90	95	
Asn Phe Phe Asn Thr Trp Ile Gly Asp Leu Ile His Arg Arg Leu Gly			
100	105	110	
Asn Arg Arg Ala Thr Phe Lys Asp Leu Gln Lys Ala Lys Leu Pro Asp			
115	120	125	
Leu Tyr Val Ile Gly Thr Asn Leu Ser Thr Gly Phe Ala Glu Val Phe			
130	135	140	
Ser Ala Glu Arg His Pro Asp Met Glu Leu Ala Thr Ala Val Arg Ile			
145	150	155	160
Ser Met Ser Ile Pro Leu Phe Phe Ala Ala Val Arg His Gly Asp Arg			
165	170	175	
Gln Asp Val Tyr Val Asp Gly Gly Val Gln Leu Asn Tyr Pro Ile Lys			
180	185	190	
Leu Phe Asp Arg Thr Arg Tyr Ile Asp Leu Ala Lys Asp Pro Gly Ala			
195	200	205	
Ala Arg His Thr Gly Tyr Tyr Asn Lys Glu Asn Ala Arg Phe Gln Leu			
210	215	220	
Glu Arg Pro Gly His Ser Pro Tyr Val Tyr Asn Arg Gln Thr Leu Gly			
225	230	235	240
Leu Arg Leu Asp Ser Arg Glu Glu Ile Ala Leu Phe Arg Tyr Asp Glu			
245	250	255	
Pro Leu Gln Gly Lys Pro Ile Lys Ser Phe Thr Asp Tyr Ala Arg Gln			
260	265	270	
Leu Phe Gly Ala Leu Lys Asn Ala Gln Glu Asn Ile His Leu His Gly			
275	280	285	
Asp Asp Trp Gln Arg Thr Val Tyr Ile Asp Thr Leu Asp Val Gly Thr			
290	295	300	
Thr Asp Phe Asn Leu Ser Asp Ala Thr Lys Gln Ala Leu Ile Glu Gln			
305	310	315	320
Gly Ile Asn Gly Thr Glu Asn Tyr Phe Glu Trp Phe Asp Asn Pro Phe			
325	330	335	
Glu Lys Pro Val Asn Arg Val Glu			
340			

<210> 93

<211> 963.

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 93

gtgattactt tgataaaaaaa atgtttatta gtattgacga tgactctatt atcaggggtt	60
ttcgtaccgc tgcagccatc atatgctact gaaaattatc caaatgatt taaactgttg	120
caacataatg tattttatt gcctgaatca gtttcttatt ggggtcagga cgaacgtgca	180
gattatatga gtaatgcaga ttactttaag ggacatgatg ctctgcttt aaatgagctt	240

tttgacaatg gaaattcgaa cgtgctgcta atgaacttat ccaaggaata tacatatcaa	300
acgccagtgc ttggccgttc gatgagtggc tggatgaaa cttagaggaa ctatttaat	360
tttgcaccgg agatgggg ttagcaatt atcagtaaat ggccaatcg ggagaaaata	420
cagcatgtt acgcgaatgg ttgcgggtca gactattatg caaataaagg atttggat	480
gcaaaaagtac aaaaaggggc taaattctat catcttatca gcactcatgc tcaagccgaa	540
gataccgggt gtgatcaggc tgaaggagca gaaattcgatc attcacatgt tcaagaaatc	600
aacgacttta taaaaataa aaacattccg aaagatggaa tggatggat tggatggac	660
ttaatgtga tgaagagtga cacaacagag tacaatagca tggatcaac attaaatgtc	720
aatgcgccta cggatattt agggcataac tctactggg acccagaaac gaacagcatt	780
acaggttaca attaccctga ttatgcgcctca cagcattag attatatttt tgtggaaaaa	840
gatcataaac accaagtc atggtaat gaaacgatta ctccgaagtc tccaacttgg	900
aaggcaatct atgagtataa tgattattcc gatcactatc ctgttaaagc atacgtaaaa	960
taa	963

<210> 94

<211> 320

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(29)

<400> 94

Met Ile Thr Leu Ile Lys Lys Cys Leu Leu Val Leu Thr Met Thr Leu	
1 5 10 15	
Leu Ser Gly Val Phe Val Pro Leu Gln Pro Ser Tyr Ala Thr Glu Asn	
20 25 30	
Tyr Pro Asn Asp Phe Lys Leu Leu Gln His Asn Val Phe Leu Leu Pro	
35 40 45	
Glu Ser Val Ser Tyr Trp Gly Gln Asp Glu Arg Ala Asp Tyr Met Ser	
50 55 60	
Asn Ala Asp Tyr Phe Lys Gly His Asp Ala Leu Leu Leu Asn Glu Leu	
65 70 75 80	
Phe Asp Asn Gly Asn Ser Asn Val Leu Leu Met Asn Leu Ser Lys Glu	
85 90 95	
Tyr Thr Tyr Gln Thr Pro Val Leu Gly Arg Ser Met Ser Gly Trp Asp	
100 105 110	
Glu Thr Arg Gly Ser Tyr Ser Asn Phe Val Pro Glu Asp Gly Gly Val	
115 120 125	
Ala Ile Ile Ser Lys Trp Pro Ile Val Glu Lys Ile Gln His Val Tyr	
130 135 140	
Ala Asn Gly Cys Gly Ala Asp Tyr Tyr Ala Asn Lys Gly Phe Val Tyr	
145 150 155 160	
Ala Lys Val Gln Lys Gly Asp Lys Phe Tyr His Leu Ile Ser Thr His	
165 170 175	
Ala Gln Ala Glu Asp Thr Gly Cys Asp Gln Gly Glu Gly Ala Glu Ile	
180 185 190	
Arg His Ser Gln Phe Gln Glu Ile Asn Asp Phe Ile Lys Asn Lys Asn	
195 200 205	
Ile Pro Lys Asp Glu Val Val Phe Ile Gly Gly Asp Phe Asn Val Met	
210 215 220	
Lys Ser Asp Thr Thr Glu Tyr Asn Ser Met Leu Ser Thr Leu Asn Val	
225 230 235 240	
Asn Ala Pro Thr Glu Tyr Leu Gly His Asn Ser Thr Trp Asp Pro Glu	

	245	250	255
Thr Asn Ser Ile Thr Gly Tyr Asn Tyr Pro Asp Tyr Ala Pro Gln His			
	260	265	270
Leu Asp Tyr Ile Phe Val Glu Lys Asp His Lys Gln Pro Ser Ser Trp			
	275	280	285
Val Asn Glu Thr-Ile Thr Pro Lys Ser Pro Thr Trp Lys Ala Ile Tyr			
	290	295	300
Glu Tyr Asn Asp Tyr Ser Asp His Tyr Pro Val Lys Ala Tyr Val Lys			
	305	310	315

<210> 95

<211> 1038

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 95

atggcttcac aattcaggaa tctggattt gaaggaggtg gtgtaaaagg gattgcgtac	60
ataggtgcga tgcagggtct ggatcagcgc ggttatttgg gtgataacat caaacgcgtt	120
ggtgaaacca gtgcagggtgc cataaatgcg ctgatttatt cgttaggata tgacatccac	180
gaacaacaag agatactgaa ctctacagat tttaaaaagt ttatggataa ctctttgga	240
tttgtgaggg atttcagaag gctatgaa gaatttggat ggaatagagg agacttttt	300
cttaaatggc caggtgagct gatcaaaaat aaattgggca cctcaaaagc caccttcag	360
gatttgaagg atgcccgtca gccagattt gatgtattt gAACAAATTt atcgacgggg	420
ttttccgaga cttttcata tgaacgtcac cccgatatga ctcttcgcaga agccgtaa	480
atcgtatgt cgcttccgcgt gttttcagg gctgtgcgtt tgggcgcacag gaatgtat	540
tatgtggatg gtgggggttca gctcaattac ccggtaaaac tatttgatcg tgaaaaat	600
attgatatgg ataatgagggc ggctgcagca cgatttactg atttacaa caaagaaaat	660
gccagatttt cgctccagcg gcctggacga agccccatg tatataatcg tcaaaccctt	720
ggtttgagac tggatacagc cgaagaaatt gcgctttca ggtacgtatgc acccattcag	780
gggaaagaga tcaaacggtt tccgaaatat gcaaaggctc tgatggcgc actaatgcag	840
gtgcaggaaa acatacatct ccacagtgc gactggcagc gtacgctgtatcaatacc	900
ctggatgtaa aaaccacaga tttgaatta accgatgaga aaaaaaagga actgttagaa	960
cagggaatcc ttggcgcgga aacctatttc aaatggttt aagacaggga tgaagtagtt	1020
gtaaaccgccc ttgcttag	1038

<210> 96.

<211> 345

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 96

Met Ala Ser Gln Phe Arg Asn Leu Val Phe Glu Gly Gly Gly Val Lys			
1	5	10	15
Gly Ile Ala Tyr Ile Gly Ala Met Gln Val Leu Asp Gln Arg Gly Tyr			
20	25	30	
Leu Gly Asp Asn Ile Lys Arg Val Gly Gly Thr Ser Ala Gly Ala Ile			
35	40	45	
Asn Ala Leu Ile Tyr Ser Leu Gly Tyr Asp Ile His Glu Gln Gln Glu			
50	55	60	
Ile Leu Asn Ser Thr Asp Phe Lys Lys Phe Met Asp Asn Ser Phe Gly			
65	70	75	80

Phe Val Arg Asp Phe Arg Arg Leu Trp Asn Glu Phe Gly Trp Asn Arg
 85 90 95
 Gly Asp Phe Phe Leu Lys Trp Ser Gly Glu Leu Ile Lys Asn Lys Leu
 100 105 110
 Gly Thr Ser Lys Ala Thr Phe Gln Asp Leu Lys Asp Ala Gly Gln Pro
 115 120 125
 Asp Leu Tyr Val Ile Gly Thr Asn Leu Ser Thr Gly Phe Ser Glu Thr
 130 135 140
 Phe Ser Tyr Glu Arg His Pro Asp Met Thr Leu Ala Glu Ala Val Arg
 145 150 155 160
 Ile Ser Met Ser Leu Pro Leu Phe Phe Arg Ala Val Arg Leu Gly Asp
 165 170 175
 Arg Asn Asp Val Tyr Val Asp Gly Gly Val Gln Leu Asn Tyr Pro Val
 180 185 190
 Lys Leu Phe Asp Arg Glu Lys Tyr Ile Asp Met Asp Asn Glu Ala Ala
 195 200 205
 Ala Ala Arg Phe Thr Asp Tyr Tyr Asn Lys Glu Asn Ala Arg Phe Ser
 210 215 220
 Leu Gln Arg Pro Gly Arg Ser Pro Tyr Val Tyr Asn Arg Gln Thr Leu
 225 230 235 240
 Gly Leu Arg Leu Asp Thr Ala Glu Glu Ile Ala Leu Phe Arg Tyr Asp
 245 250 255
 Glu Pro Ile Gln Gly Lys Glu Ile Lys Arg Phe Pro Glu Tyr Ala Lys
 260 265 270
 Ala Leu Ile Gly Ala Leu Met Gln Val Gln Glu Asn Ile His Leu His
 275 280 285
 Ser Asp Asp Trp Gln Arg Thr Leu Tyr Ile Asn Thr Leu Asp Val Lys
 290 295 300
 Thr Thr Asp Phe Glu Leu Thr Asp Glu Lys Lys Lys Glu Leu Val Glu
 305 310 315 320
 Gln Gly Ile Leu Gly Ala Glu Thr Tyr Phe Lys Trp Phe Glu Asp Arg
 325 330 335
 Asp Glu Val Val Val Asn Arg Leu Ala
 340 345

<210> 97

<211> 1422

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 97

atgaaaagga	aactatgtac	atgggctctc	gtaacagcaa	tagttctag	tactgcggta	60
attccaacag	cagcagaagc	tttgaggatta	ggagaagtaa	tcaaacaaga	gaatcaagag	120
cacaaacgtg	tgaaaagatg	gtctgcggag	catccgcata	attcacatga	aagtaccat	180
ttatggattg	cacaaaatgc	gattcaaatt	atgagccgta	atcaagataa	gacggttcaa	240
gaaaatgaat	tacaatttt	aaataccct	gaatataagg	agttatttga	aagaggtctt	300
tatgatgctg	attaccttga	tgaatttaac	gatggaggt	caggtataat	cggcattgtat	360
gggctaattc	gaggagggt	gaaatctcat	ttctacgatc	ccgataacaag	aaagaactat	420
aaaggggagg	aagaaccaac	agctcttct	caaggagata	aatattttaa	attagcaggt	480
gaatacttta	agaagaatga	ttgaaaacag	gctttctatt	attttaggtgt	tgcgacgcac	540
tactttacag	atgctactca	gccaatgcat	gctgctaatt	ttacagctgt	cgacaggagt	600
gctataaaat	ttcatatgtc	tttgaagat	tatgtgacga	caattcagga	acagttaaa	660
gtatcagatg	gagagggaaa	atataattta	gtaaattcta	atgatccgaa	acagtggatc	720
catgaaacag	cgagactcgc	aaaagtggaa	atcgggaaca	ttaccaatga	tgtgattaaa	780

tctcaactata ataaaggaaa caatgcttt tggcagcaag aagttatgcc agctgttcag	840
agaagtttag aacaagccc aagaaaatacg gcgggattta ttcatttatg gttaaaaca	900
tatgttggaa aaacagctgc tgaagatatt gaaaatacta tagtgaaga ttctagggga	960
gaagcaatac aagagaataa aaaatactt gtagtaccaa gtgagtttt aaatagaggc	1020
ttaacatgg aagtgtatgc tgcttatgac tatgcgttat tatctaacc tacatgttat	1080
aataatattc atggtacacc ggttcaaatt gtatttgata aagaaaataa tgggatcctt	1140
catcaaggag aaagtgcatt gttaaagatg acacaatcca actacgataa ttatgtattt	1200
ctaaattatt ctatcataac aaattggta catcttgc当地 aaagagaaaa caatactgca	1260
cagttaaag tgtatccaa tccaaataat ccaactgaat atttcatata tacagatggc	1320
tatccagttt attatcaaga aaaaggtaaa gagaaaagct ggattgtttt aggaaagaaa	1380
acggataaac caaaagcatg gaaattata caggcgaat aa	1422

<210> 98

<211> 473

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(25)

<400> 98

Met Lys Arg Lys Leu Cys Thr Trp Ala Leu Val Thr Ala Ile Ala Ser	
1 5 10 15	
Ser Thr Ala Val Ile Pro Thr Ala Ala Glu Ala Cys Gly Leu Gly Glu	
20 25 30	
Val Ile Lys Gln Glu Asn Gln Glu His Lys Arg Val Lys Arg Trp Ser	
35 40 45	
Ala Glu His Pro His His Ser His Glu Ser Thr His Leu Trp Ile Ala	
50 55 60	
Gln Asn Ala Ile Gln Ile Met Ser Arg Asn Gln Asp Lys Thr Val Gln	
65 70 75 80	
Glu Asn Glu Leu Gln Phe Leu Asn Thr Pro Glu Tyr Lys Glu Leu Phe	
85 90 95	
Glu Arg Gly Leu Tyr Asp Ala Asp Tyr Leu Asp Glu Phe Asn Asp Gly	
100 105 110	
Gly Thr Gly Ile Ile Gly Ile Asp Gly Leu Ile Arg Gly Gly Trp Lys	
115 120 125	
Ser His Phe Tyr Asp Pro Asp Thr Arg Lys Asn Tyr Lys Gly Glu Glu	
130 135 140	
Glu Pro Thr Ala Leu Ser Gln Gly Asp Lys Tyr Phe Lys Leu Ala Gly	
145 150 155 160	
Glu Tyr Phe Lys Lys Asn Asp Trp Lys Gln Ala Phe Tyr Tyr Leu Gly	
165 170 175	
Val Ala Thr His Tyr Phe Thr Asp Ala Thr Gln Pro Met His Ala Ala	
180 185 190	
Asn Phe Thr Ala Val Asp Arg Ser Ala Ile Lys Phe His Ser Ala Phe	
195 200 205	
Glu Asp Tyr Val Thr Thr Ile Gln Glu Gln Phe Lys Val Ser Asp Gly	
210 215 220	
Glu Gly Lys Tyr Asn Leu Val Asn Ser Asn Asp Pro Lys Gln Trp Ile	
225 230 235 240	
His Glu Thr Ala Arg Leu Ala Lys Val Glu Ile Gly Asn Ile Thr Asn	
245 250 255	
Asp Val Ile Lys Ser His Tyr Asn Lys Gly Asn Asn Ala Leu Trp Gln	

260	265	270
Gln Glu Val Met Pro Ala Val Gln Arg Ser Leu Glu Gln Ala Gln Arg		
275	280	285
Asn Thr Ala Gly Phe Ile His Leu Trp Phe Lys Thr Tyr Val Gly Lys		
290	295	300
Thr Ala Ala Glu Asp Ile Glu Asn Thr Ile Val Lys Asp Ser Arg Gly		
305	310	315
Glu Ala Ile Gln Glu Asn Lys Lys Tyr Phe Val Val Pro Ser Glu Phe		
325	330	335
Leu Asn Arg Gly Leu Thr Phe Glu Val Tyr Ala Ala Tyr Asp Tyr Ala		
340	345	350
Leu Leu Ser Asn His Val Asp Asp Asn Asn Ile His Gly Thr Pro Val		
355	360	365
Gln Ile Val Phe Asp Lys Glu Asn Asn Gly Ile Leu His Gln Gly Glu		
370	375	380
Ser Ala Leu Leu Lys Met Thr Gln Ser Asn Tyr Asp Asn Tyr Val Phe		
385	390	395
Leu Asn Tyr Ser Ile Ile Thr Asn Trp Val His Leu Ala Lys Arg Glu		
405	410	415
Asn Asn Thr Ala Gln Phe Lys Val Tyr Pro Asn Pro Asn Asn Pro Thr		
420	425	430
Glu Tyr Phe Ile Tyr Thr Asp Gly Tyr Pro Val Asn Tyr Gln Glu Lys		
435	440	445
Gly Lys Glu Lys Ser Trp Ile Val Leu Gly Lys Lys Thr Asp Lys Pro		
450	455	460
Lys Ala Trp Lys Phe Ile Gln Ala Glu		
465	470	

<210> 99
<211> 1053
<212> DNA
<213> Unknown

<220>
<223> Obtained from an environmental sample.

<400> 99	60
atggcaaagc gttttattct ttcgatcgat ggtggggca ttcgcgggat catccggcg	120
gccatctgg tggagctggc caagcggttg gaggggctgc cgcttacaaa ggcattcgac	180
atgatcgccg ggacatccac cggcggcata attgcggccgg ggctgacatg cccgcacatct	240
gacgatgagg agacggccgc gtgcacgccc accgatcttc tcaagcttta tgtcgatcac	300
ggcggcaaga tcttcgagaa aaacccgatc ctgcgcctca tcaaccatt cggcctcaac	360
gatccgcgtt accagccaga tgagctggaa aacaggctga aggccgacgt cggcttgacg	420
gcgacgctcg ataaaaggct caccaagggtg ctgatcacgg cctatgatata ccagcagcgg	480
caggcgctgt tcatggcaaa caccgaacaac gagaacagca atttccgcta ctggaggca	540
gcgcggggcga catcgccgc acccacctat ttccgcgg cgctgatcga aagggttggc	600
gagaagaaca aggacaagcg cttcgtgcca ttgatcgacg gcccgtt cggccaaacgat	660
cctatccctt ccgcctatgt ggaggcgcgaa aagcagaat ggggcaatga cgagctcggt	720
ttcctgtcgcc ttggtacccg ccagcaaaac cgcggatcg cctatcagga ggccaaagggc	780
tggggcattt taggctggat gcagccgtct catgacacgc cgctgatctc gatcctgatg	840
cagggacagg cgagcacccgc ctccatatcag gccaatgcgc tgctcaatcc gccccggcacc	900
aagatcgact attcgaccgt ggtgacgaaag gacaacgcgg cttcgctcag ctatccgt	960
ctcgaccggc agctgagctc gaaggagaac gacgcgctgg acgacgcata gcccggaaac	1020
atcagggcgc tgaaggcaat cgccgcgcaa atcatcaagg ataacgcgcc ggcgctcgac	1053
gaaatcgcca aacgcataccaa taa	

<210> 100

<211> 350

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 100

Met Ala Lys Arg Phe Ile Leu Ser Ile Asp Gly Gly Gly Ile Arg Gly
1 5 10 15
Ile Ile Pro Ala Ala Ile Leu Val Glu Leu Ala Lys Arg Leu Glu Gly
20 25 30
Leu Pro Leu His Lys Ala Phe Asp Met Ile Ala Gly Thr Ser Thr Gly
35 40 45
Gly Ile Ile Ala Ala Gly Leu Thr Cys Pro His Pro Asp Asp Glu Glu
50 55 60
Thr Ala Ala Cys Thr Pro Thr Asp Leu Leu Lys Leu Tyr Val Asp His
65 70 75 80
Gly Gly Lys Ile Phe Glu Lys Asn Pro Ile Leu Gly Leu Ile Asn Pro
85 90 95
Phe Gly Leu Asn Asp Pro Arg Tyr Gln Pro Asp Glu Leu Glu Asn Arg
100 105 110
Leu Lys Ala Gln Leu Gly Leu Thr Ala Thr Leu Asp Lys Gly Leu Thr
115 120 125
Lys Val Leu Ile Thr Ala Tyr Asp Ile Gln Gln Arg Gln Ala Leu Phe
130 135 140
Met Ala Asn Thr Asp Asn Glu Asn Ser Asn Phe Arg Tyr Trp Glu Ala
145 150 155 160
Ala Arg Ala Thr Ser Ala Ala Pro Thr Tyr Phe Pro Pro Ala Leu Ile
165 170 175
Glu Arg Val Gly Glu Lys Asn Lys Asp Lys Arg Phe Val Pro Leu Ile
180 185 190
Asp Gly Gly Val Phe Ala Asn Asp Pro Ile Leu Ala Ala Tyr Val Glu
195 200 205
Ala Arg Lys Gln Lys Trp Gly Asn Asp Glu Leu Val Phe Leu Ser Leu
210 215 220
Gly Thr Gly Gln Gln Asn Arg Pro Ile Ala Tyr Gln Glu Ala Lys Gly
225 230 235 240
Trp Gly Ile Leu Gly Trp Met Gln Pro Ser His Asp Thr Pro Leu Ile
245 250 255
Ser Ile Leu Met Gln Gly Gln Ala Ser Thr Ala Ser Tyr Gln Ala Asn
260 265 270
Ala Leu Leu Asn Pro Pro Gly Thr Lys Ile Asp Tyr Ser Thr Val Val
275 280 285
Thr Lys Asp Asn Ala Ala Ser Leu Ser Tyr Phe Arg Leu Asp Arg Gln
290 295 300
Leu Ser Ser Lys Glu Asn Asp Ala Leu Asp Asp Ala Ser Pro Glu Asn
305 310 315 320
Ile Arg Ala Leu Lys Ala Ile Ala Ala Gln Ile Ile Lys Asp Asn Ala
325 330 335
Pro Ala Leu Asp Glu Ile Ala Lys Arg Ile Leu Ala Asn Gln
340 345 350

<211> 101

<211> 996

<212> DNA

<213> Bacteria

<400> 101

ttgtcgctcg	tcgcgtcgt	ccgcgcgcgc	cccggcgccg	ccctggccct	cgcgttgcc	60
gccgcccccc	tggccgtgac	cgcgcaggc	gcccaccggc	cccccgccgc	ggccgcccgc	120
gaggccccgc	ggctcaaggt	gctcacgtac	aacacgttcc	tgttctcgaa	gacgcgtctac	180
ccgaactggg	gccaggacca	ccgggccaag	gcatccccca	ccgccccctt	ctaccaggc	240
caggacgtcg	tggtcctcca	ggaggccttc	gacaactccg	cgtcggacgc	cctcaaggcg	300
aactccgccc	gccagtagcc	ctaccagacc	ccgtcggtgg	gccgcggcac	cggcggctgg	360
gacgcccccg	gccccgtccta	ctccctcgacc	accccccagg	acggcggcgt	gacgatcctc	420
agcaagtggc	cgatcggtccg	caaggagcag	tacgtctaca	aggacgcgtg	cggcggccgc	480
tggtgtcca	acaagggtctt	cgcctacgtc	gtgctcaacg	tgaacggcag	caagggtgcac	540
gtcctcggca	cccacgccc	gtccaccggc	ccgggctgtc	cggcgggcga	ggcgggtgcag	600
atgcggagcc	gccagttcaa	ggcgatcgac	gccttcctcg	acgccaagaa	catcccgccg	660
ggcgagcagg	tgatcggtcgc	cggcgacatg	aacgtcgact	cgcgcacgc	cgagtaacggc	720
accatgctcg	ccgacgcccgg	tctggggcg	gccgacgcgc	gcaccggcca	cccgtactcc	780
ttcgacaccg	agctgaactc	gatcgctcc	gagcgctacc	cgcacgacc	gcccggaggac	840
ctcgattacg	tcctcttaccc	cgccgggaaac	gccccccccc	ccaactggac	caacaacgtg	900
gtcctggaga	agagcgcccc	gtggaccgtc	tccagctggg	gcaagagacta	cacctacacc	960
aacctctccg	accactaccc	ggtcaccggc	ttctga			996

<210> 102

<211> 331

<212> PRT

<213> Bacteria

<220>

<221> SIGNAL

<222> (1)...(39)

<400> 102

Leu	Ser	Leu	Val	Ala	Ser	Leu	Arg	Arg	Ala	Pro	Gly	Ala	Ala	Leu	Ala	
1					5				10					15		
Leu	Ala	Leu	Ala	Ala	Ala	Ala	Thr	Leu	Ala	Val	Thr	Ala	Gln	Gly	Ala	Thr
								20		25				30		
Ala	Ala	Pro	Ala	Ala	Ala	Ala	Ala	Glu	Ala	Pro	Arg	Leu	Lys	Val	Leu	
								35		40			45			
Thr	Tyr	Asn	Thr	Phe	Leu	Phe	Ser	Lys	Thr	Leu	Tyr	Pro	Asn	Trp	Gly	
								50		55			60			
Gln	Asp	His	Arg	Ala	Lys	Ala	Ile	Pro	Thr	Ala	Pro	Phe	Tyr	Gln	Gly	
							65		70			75		80		
Gln	Asp	Val	Val	Val	Leu	Gln	Glu	Ala	Phe	Asp	Asn	Ser	Ala	Ser	Asp	
							85		90			95				
Ala	Leu	Lys	Ala	Asn	Ser	Ala	Gly	Gln	Tyr	Pro	Tyr	Gln	Thr	Pro	Val	
							100		105			110				
Val	Gly	Arg	Gly	Thr	Gly	Gly	Trp	Asp	Ala	Thr	Gly	Ser	Tyr	Ser		
							115		120			125				
Ser	Thr	Thr	Pro	Glu	Asp	Gly	Gly	Val	Thr	Ile	Leu	Ser	Lys	Trp	Pro	
							130		135			140				
Ile	Val	Arg	Lys	Glu	Gln	Tyr	Val	Tyr	Lys	Asp	Ala	Cys	Gly	Ala	Asp	
							145		150			155		160		
Trp	Trp	Ser	Asn	Lys	Gly	Phe	Ala	Tyr	Val	Val	Leu	Asn	Val	Asn	Gly	
							165		170			175				
Ser	Lys	Val	His	Val	Leu	Gly	Thr	His	Ala	Gln	Ser	Thr	Asp	Pro	Gly	
							180		185			190				
Cys	Ser	Ala	Gly	Glu	Ala	Val	Gln	Met	Arg	Ser	Arg	Gln	Phe	Lys	Ala	
							195		200			205				
Ile	Asp	Ala	Phe	Leu	Asp	Ala	Lys	Asn	Ile	Pro	Ala	Gly	Glu	Gln	Val	

210	215	220
Ile Val Ala Gly Asp Met	Asn Val Asp Ser Arg	Thr Pro Glu Tyr Gly
225	230	235
Thr Met Leu Ala Asp Ala Gly	Leu Ala Ala Ala Asp Ala Arg	Thr Gly
245	250	255
His Pro Tyr Ser-Phe Asp Thr	Glu Leu Asn Ser Ile Ala Ser	Glu Arg
260	265	270
Tyr Pro Asp Asp Pro Arg	Glu Asp Leu Asp Tyr Val	Leu Tyr Arg Ala
275	280	285
Gly Asn Ala Arg Pro Ala Asn	Trp Thr Asn Asn Val Val	Leu Glu Lys
290	295	300
Ser Ala Pro Trp Thr Val Ser	Ser Trp Gly Lys	Ser Tyr Thr Tyr Thr
305	310	315
Asn Leu Ser Asp His Tyr Pro Val	Thr Gly Phe	
	325	330

<210> 103

<211> 2205

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 103

atgagcgaga	agaaggagat	tcgcgttgcg	ttgatcatgg	ggggtgtggcgt	cagcctcgcc	60
agtttttcgg	gtgggtgcgct	tctcaagacc	atcgagctgc	tgcagcacac	tgcccgccgt	120
ccggcgaaga	tcgatgtcgt	gaccgggtgcc	tcggcggaa	gcatgacgct	gggcgttagtc	180
atctaccacc	tcatgcgggg	atcgtcgacc	gatgagattc	tccgcgatct	gaggccgtcg	240
tgggtggaaa	tgatctcggt	cgacggcctc	tgtccggcga	acctgtccc	tcacgacaag	300
ccgagcctgt	tttccgatga	gatcgccgg	aagatcgccg	ccaccgtcat	cgatatgggg	360
cgcaagctcg	aggcggctcc	tcatccgctt	ttcggccacg	aactcgtagc	ctcgttcgca	420
ctgacgaacc	tgaacggcat	ccccggccgt	acggagggcc	agtcatccg	gcaggcaaag	480
ggaggcggag	ggtccgagaa	gggctcgaaa	tccgtttcg	ccgacgcccgt	gcagactacc	540
tttcaccacg	acgtgatgcg	attcggtgt	cggcgcgatc	acaacgggca	aggcagcctg	600
ttcgacagcc	gttaccgggc	acgcataactc	cctccatgga	atgttggaa	ggcggccgat	660
gcatgggaag	ccttcgcac	ggcggctgtt	gcctcgggg	cgttccggc	cgcatttcct	720
cccgctcgaga	tcaagccgaa	ccgcgacgaa	ttcaacatct	ggcccgtatcg	catcgaggac	780
cagaaggcat	ttacgttcg	ttacgtggac	ggcgggtac	ttcgcacacg	acccctccgg	840
gaggcgttcc	acctggccgc	gctgcgcgt	gagggagcga	cggacatcg	gcgtgtgttc	900
atcctcatcg	acccgaacat	cagggcacc	ggcgaggtct	tcccgtctc	ctataaccag	960
cagatgcgga	tcaagccgaa	ctacgattcc	aacggcgtac	tccgacagta	cgatctcgat	1020
gtgccggact	acaccggcaa	tctgatcggt	gcgatcggtc	ggctgggttc	ggtgatcgtc	1080
gggcaggcga	cgttccgca	ctgctcaag	gctgccaaag	tgaacagcca	gatcgagtgg	1140
cgacgggaat	tgctgcccatt	tctccgccc	ctgaacccga	accccgggga	ggaggcgcgc	1200
aggggcgtga	acgggatgtat	cgacaagatc	tacggcaaa	agtatcagcg	cgccctcgag	1260
tcaaagagcg	ttccggtcga	ggaggtggaa	cggcgcgttg	ccgaagacat	cgaacgggac	1320
ctggcgcggc	gccgttcgga	ggccggcgac	aacgacttca	ttgcccggct	cctctcgctc	1380
gtcgacactga	tcggcaacct	gcgtgagaa	cagaagctga	acatggtggc	gatcaccccc	1440
gcttcggcgc	cgcacaacga	cgggcgcccc	ttgcccgtgg	ccggcaattt	tatgttcagc	1500
ttcgggggt	tcttcaggg	ggagttacagg	caatacgact	tctcggtcg	cgaattcgca	1560
gcatggaacg	tcctgagcac	gcccggctcc	gagacgccc	ttcttgccga	gaccggcccc	1620
aaaccggcccg	cccgacctcc	ccagccgccc	gcaatcaatc	ctacctaccg	ctcactcgcc	1680
ccgccccatcc	agcagcgtt	cgaggagttc	gttcgtggc	acgttcgccc	ctttatcgct	1740
tcggtcgctc	cgctggaaac	gagagggatc	gtcacggca	agattggcgg	aaagcttcga	1800
acgatgctga	tggcctcgcc	caacggaaaa	tcagagtact	tccggcttcg	cctctccggc	1860
gttgacgggc	tctacctccg	aggctccaag	ggccgcaacc	tgagggcgt	taacggatcg	1920

atcgacacgg tcgtcgccgt ctatatcgac gaggaagatc agcacccgcga tgagtttc	1980
ggccccatg tcttcggcgc gaacggctca ggcttacga tggaaactatg ggagtccgc	2040
ggttttcg ggcgtatcg tcgcgtcgct gtatcgagt tggagaacaa ccccgccgg	2100
ttcgcaatcg cccggatg caggccgggg cccggcgatgg tgcgtggatat ggcaggcgt	2160
aacgggcagc cactgcggac ggtggatgtg atggaaatttg cgtga	2205

<210> 104

<211> 734

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 104

Met Ser Glu Lys Lys Glu Ile Arg Val Ala Leu Ile Met Gly Gly Gly	
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Val Ser Leu Gly Ser Phe Ser Gly Gly Ala Leu Leu Lys Thr Ile Glu	
20 25 30	
Leu Leu Gln His Thr Ala Arg Gly Pro Ala Lys Ile Asp Val Val Thr	
35 40 45	
Gly Ala Ser Ala Gly Ser Met Thr Leu Gly Val Val Ile Tyr His Leu	
50 55 60	
Met Arg Gly Ser Ser Thr Asp Glu Ile Leu Arg Asp Leu Arg Arg Ser	
65 70 75 80	
Trp Val Glu Met Ile Ser Phe Asp Gly Leu Cys Pro Pro Asn Leu Ser	
85 90 95	
Arg His Asp Lys Pro Ser Leu Phe Ser Asp Glu Ile Val Arg Lys Ile	
100 105 110	
Ala Ala Thr Val Ile Asp Met Gly Arg Lys Leu Glu Ala Ala Pro His	
115 120 125	
Pro Leu Phe Ala Asp Glu Leu Val Ala Ser Phe Ala Leu Thr Asn Leu	
130 135 140	
Asn Gly Ile Pro Ala Arg Thr Glu Gly Gln Leu Ile Arg Gln Ala Lys	
145 150 155 160	
Gly Gly Gly Ser Glu Lys Gly Ser Lys Ser Val Phe Ala Asp Ala	
165 170 175	
Val Gln Thr Thr Phe His His Asp Val Met Arg Phe Val Val Arg Arg	
180 185 190	
Asp His Asn Gly Gln Gly Ser Leu Phe Asp Ser Arg Tyr Arg Ala Arg	
195 200 205	
Ile Leu Pro Pro Trp Asn Val Gly Lys Gly Asp Ala Trp Glu Ala	
210 215 220	
Phe Arg Thr Ala Ala Val Ala Ser Gly Ala Phe Pro Ala Ala Phe Pro	
225 230 235 240	
Pro Val Glu Ile Ser Arg Asn Arg Asp Glu Phe Asn Ile Trp Pro Asp	
245 250 255	
Arg Ile Glu Asp Gln Lys Ala Phe Thr Phe Asp Tyr Val Asp Gly Gly	
260 265 270	
Val Leu Arg Asn Glu Pro Leu Arg Glu Ala Ile His Leu Ala Ala Leu	
275 280 285	
Arg Asp Glu Gly Ala Thr Asp Ile Glu Arg Val Phe Ile Leu Ile Asp	
290 295 300	
Pro Asn Ile Ser Gly Thr Gly Glu Val Phe Pro Leu Ser Tyr Asn Gln	
305 310 315 320	
Gln Met Arg Ile Lys Pro Asn Tyr Asp Ser Asn Gly Asp Val Arg Gln	
325 330 335	

Tyr Asp Leu Asp Val Pro Asp Tyr Thr Gly Asn Leu Ile Gly Ala Ile
 340 345 350
 Gly Arg Leu Gly Ser Val Ile Val Gly Gln Ala Thr Phe Arg Asp Trp
 355 360 365
 Leu Lys Ala Ala Lys Val Asn Ser Gln Ile Glu Trp Arg Arg Glu Leu
 370 375 380
 Leu Pro Ile Leu Arg Asp Leu Asn Pro Asn Pro Gly Glu Glu Ala Arg
 385 390 395 400
 Arg Gly Val Asn Gly Met Ile Asp Lys Ile Tyr Arg Gln Lys Tyr Gln
 405 410 415
 Arg Ala Leu Glu Ser Lys Ser Val Pro Val Glu Glu Val Glu Arg Arg
 420 425 430
 Val Ala Glu Asp Ile Glu Arg Asp Leu Ala Arg Arg Ser Glu Ala
 435 440 445
 Gly Asp Asn Asp Phe Ile Ala Arg Leu Leu Leu Val Asp Leu Ile
 450 455 460
 Gly Asn Leu Arg Glu Lys Gln Lys Leu Asn Met Val Ala Ile Thr Pro
 465 470 475 480
 Ala Ser Ala Pro His Asn Asp Gly Arg Pro Leu Pro Leu Ala Gly Asn
 485 490 495
 Phe Met Phe Ser Phe Gly Gly Phe Phe Arg Glu Glu Tyr Arg Gln Tyr
 500 505 510
 Asp Phe Ser Val Gly Glu Phe Ala Ala Trp Asn Val Leu Ser Thr Pro
 515 520 525
 Ala Ser Glu Thr Pro Phe Leu Ala Glu Thr Ala Pro Lys Pro Pro Ala
 530 535 540
 Arg Pro Pro Gln Pro Pro Ala Ile Asn Pro Thr Tyr Arg Ser Leu Gly
 545 550 555 560
 Pro Pro Ile Gln Gln Arg Phe Glu Glu Phe Val Arg Gly His Val Arg
 565 570 575
 Ala Phe Ile Ala Ser Val Ala Pro Leu Gly Thr Arg Gly Ile Val Thr
 580 585 590
 Gly Lys Ile Gly Gly Lys Leu Arg Thr Met Leu Met Ala Ser Arg Asn
 595 600 605
 Gly Lys Ser Glu Tyr Phe Arg Leu Arg Leu Ser Gly Val Asp Gly Leu
 610 615 620
 Tyr Leu Arg Gly Ser Lys Gly Arg Asn Leu Arg Ala Val Asn Gly Ser
 625 630 635 640
 Ile Asp Thr Val Val Gly Val Tyr Ile Asp Glu Glu Asp Gln His Arg
 645 650 655
 Asp Glu Phe Phe Gly Pro His Val Phe Gly Ala Asn Gly Ser Gly Phe
 660 665 670
 Thr Met Glu Leu Trp Glu Ser Arg Gly Phe Phe Gly Arg Asp Arg Arg
 675 680 685
 Val Ala Val Ile Glu Leu Glu Asn Asn Pro Gly Gly Phe Ala Ile Ala
 690 695 700
 Ala Gly Cys Arg Arg Arg Pro Gly Val Val Leu Asp Met Ala Arg Arg
 705 710 715 720
 Asn Gly Gln Pro Leu Arg Thr Val Asp Val Met Glu Phe Ala
 725 730

<210> 105

<211> 756

<212> DNA

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<400> 105

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cccacccaca	gcta	gctcac	cgaatacgcc	atcgatcagc	ttgggtggc	gcggccgg	180
ctccggcaat	accgcaagca	gatcatcgag	ggcgccaaca	cggagctgca	cgaactgcca		240
gtcaagggaa	cggcctatgg	cctcgaccc	gacgccaagc	ggggaaaca	ccgcggcacc		300
aatgccccaa	cagacgacat	cgccggctgg	tggcgaaa	gcctccaagc	ctatcgcc		360
ggtgccaagg	aacgcgccta	cttcgtgt	gggtgtgtc	tgacatgg	cgaggacatg		420
ggcgtgccgg	cgcacgcgaa	cggcgctac	caccaggca	acctgactga	attcgacaat		480
ttcgagttca	tgggactgtc	gaactggaag	ccctcttcg	ccgacatcaa	ccggaccgat		540
ccgggctacg	ccgaccgcgtc	gcgctactac	gagttcagcc	gagattggac	ggccgcagac		600
gcacccggct	atcgcgaccc	cgacagctc	tcgaagacct	ggttctcg	cagccggcc		660
gaacgtcagc	tgcttcagaa	ccgcgcaggc	cggaccgcca	cggtcgccat	gtggcgta		720
cgagcgcga	cgaaggcg	tttccat					756

<210> 106

<211> 251

<212> PRT

<213> Unknown

<220>

<223> Obtained from an environmental sample.

<221> SIGNAL

<222> (1)...(30)

<400> 106

Met	Asn	Arg	Cys	Arg	Asn	Ser	Leu	Asn	Leu	Gln	Leu	Arg	Ala	Val	Thr
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Val	Ala	Ala	Leu	Val	Val	Val	Ala	Ser	Ser	Ala	Ala	Leu	Ala	Trp	Asp
							20		25					30	
Ser	Ala	Ser	Arg	Asn	Pro	Thr	His	Pro	Thr	His	Ser	Tyr	Leu	Thr	Glu
							35		40					45	
Tyr	Ala	Ile	Asp	Gln	Leu	Gly	Val	Ala	Arg	Pro	Glu	Leu	Arg	Gln	Tyr
							50		55					60	
Arg	Lys	Gln	Ile	Ile	Glu	Gly	Ala	Asn	Thr	Glu	Leu	His	Glu	Leu	Pro
							65		70					80	
Val	Lys	Gly	Thr	Ala	Tyr	Gly	Leu	Asp	Leu	Asp	Ala	Lys	Arg	Arg	Glu
							85		90					95	
His	Arg	Gly	Thr	Asn	Ala	Gly	Thr	Asp	Asp	Ile	Ala	Gly	Trp	Trp	Ala
							100		105					110	
Glu	Ser	Leu	Gln	Ala	Tyr	Arg	Ala	Gly	Ala	Lys	Glu	Arg	Ala	Tyr	Phe
							115		120					125	
Val	Leu	Gly	Val	Val	Leu	His	Met	Val	Glu	Asp	Met	Gly	Val	Pro	Ala
							130		135					140	
His	Ala	Asn	Gly	Val	Tyr	His	Gln	Gly	Asn	Leu	Thr	Glu	Phe	Asp	Asn
							145		150					160	
Phe	Glu	Phe	Met	Gly	Leu	Ser	Asn	Trp	Lys	Pro	Ser	Phe	Ala	Asp	Ile
							165		170					175	
Asn	Arg	Thr	Asp	Pro	Gly	Tyr	Ala	Asp	Pro	Ser	Arg	Tyr	Tyr	Glu	Phe
							180		185					190	
Ser	Arg	Asp	Trp	Thr	Ala	Ala	Asp	Ala	Pro	Gly	Tyr	Arg	Asp	Arg	Asp
							195		200					205	
Ser	Phe	Ser	Lys	Thr	Trp	Val	Leu	Ala	Ser	Pro	Ala	Glu	Arg	Gln	Leu
							210		215					220	

Leu Gln Asn Arg Gln Gl rg Thr Ala Thr Val Ala Met Trp Ala Leu
225 230 235 240
Arg Ser Ala Thr Lys Ala The Ala Gly Lys Pro
245 250